

Diagnosing Trauma in Adolescence: investigating appropriate diagnostic constructs to explain complex attachment and trauma related symptomatology in a sample of adolescents in out-of-home care.

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Table of Contents

TABLE OF TABLES	IV
TABLE OF FIGURES	V
ACKNOWLEDGEMENTS.....	VI
ABSTRACT.....	VII
CHAPTER ONE: INTRODUCTION	1
MENTAL HEALTH OF ADOLESCENTS IN CARE WITH A MALTREATMENT HISTORY	1
<i>Background to Severe Maltreatment and Entry into Out-of-Home Care.....</i>	1
<i>The Mental Health of Maltreated Young People, Including those Placed into Care</i>	2
<i>Complex Symptomatology not Adequately Conceptualised in the DSM.....</i>	4
<i>Diagnostic Disagreement and Inappropriate Co-morbid Diagnoses.....</i>	5
DEVELOPMENTAL AND CLINICAL IMPLICATIONS OF EXPOSURE TO SEVERE AND CHRONIC MALTREATMENT	7
<i>Psychological Frameworks for Understanding Developmental Impact of Maltreatment</i>	7
Neurological Changes.	7
Early Brain Development.....	7
Neurosequential Model of Therapeutics.	8
Attachment System Changes	9
Attachment Styles.....	10
Attachment Disorders.	11
<i>Impact of Maltreatment on Different Domains of Functioning</i>	12
Changes in Affect and Regulatory Capacity. There are numerous symptoms related to affect and dysregulation that are common amongst adolescence who have experienced maltreatment.	12
Affect	12
Emotional Regulation	13
Behavioural Regulation.....	14
Deficits in Mentalisation/Theory of Mind	14
Deficits in Interpersonal Relationships	15
Changes in Self-Concept and Worldview	16
Changes in Attention and Consciousness	17
<i>Differential Effects of Maltreatment Exposure.....</i>	18
Age at Time of Exposure	18
Proximity of Trauma	19
Cumulative Trauma.....	19
Various Maltreatment Exposure.....	20
Gender Differences.....	21
CURRENT CONCEPTUALISATION OF COMPLEX SYMPTOMATOLOGY MANIFESTED BY ADOLESCENTS WITH PRIOR MALTREATMENT	22
<i>Comorbid Diagnoses.....</i>	22
<i>Transdiagnostic Approaches</i>	23
<i>Diagnostic Constructs</i>	24
Borderline Personality Disorder (BPD).....	24
Origin of BPD.....	24
Diagnostic Criteria.	25
Borderline Personality Disorder in Adolescence	26
Borderline Personality Disorder and Maltreatment.	28
Complex Post-Traumatic Stress Disorder (C-PTSD)	29
Origin of C-PTSD.....	29
Why PTSD is Ill-Equipped.....	30
Diagnostic Criteria	31
Developmental Trauma Disorder (DTD)	33
Origin of DTD	33
Proposed Diagnostic Criteria.	34
Arguments Against DTD.....	35
CHAPTER TWO: LITERATURE REVIEW	38
PURPOSE AND PROCEDURE	38
SELECTION CRITERIA	38

<i>Inclusion Criteria</i>	38
<i>Exclusion Criteria</i>	38
SEARCH STRATEGY.....	39
REVIEW OF THE BORDERLINE PERSONALITY DISORDER (BPD) LITERATURE.....	39
<i>BPD in a Maltreatment Population</i>	39
<i>Evidence Supporting the BPD Construct in Adolescents</i>	41
Validity of BPD Diagnosis in Adolescence.....	41
Key BPD Symptoms in Adolescence.....	42
Changes in BPD Symptom Profiles throughout Adolescence.....	43
Early Signs of Adulthood BPD Observable in Adolescence.....	43
<i>Evidence Refuting the BPD Construct in Adolescents</i>	44
Stability of BPD Diagnosis in Adolescence.....	45
REVIEW OF THE COMPLEX POST TRAUMATIC STRESS DISORDER (C-PTSD) LITERATURE.....	47
<i>Evidence Supporting the C-PTSD Construct in Adolescents</i>	47
REVIEW OF THE DEVELOPMENTAL TRAUMA DISORDER (DTD) LITERATURE.....	49
<i>Evidence Supporting the DTD Construct in Adolescents</i>	50
DTD and Trauma Symptoms.....	50
DTD and Trauma Experiences.....	51
Clinicians Perspectives.....	52
<i>Evidence Refuting the DTD Construct in Adolescence</i>	52
SYMPTOM PROFILES.....	53
CONCLUSION.....	54
JUSTIFICATION FOR THE PRESENT STUDY.....	55
RESEARCH QUESTION.....	57
CHAPTER 3: METHODOLOGY	58
THE CHILDREN IN CARE STUDY (CICS).....	58
<i>Participants</i>	59
The CICS Follow Up Survey.....	59
The Adolescent Survey.....	59
<i>Sources of Data</i>	60
Mental Health Measures.....	60
CBCL.....	61
ACA.....	61
Further Information Gathered.....	62
<i>Ethical Approval</i>	63
<i>Procedure</i>	63
THE CURRENT STUDY.....	64
CONSTRUCTION OF BPD, C-PTSD AND DTD SCALES.....	64
Borderline Personality Disorder Scale.....	65
Complex Post-Traumatic Stress Disorder Scale.....	67
Developmental Trauma Disorder Scale.....	69
<i>Statistical Analysis</i>	71
BPD and C-PTSD Symptom-Level Analysis.....	71
BPD and C-PTSD Case-Level Analysis.....	72
Identifying and Defining the Cases.....	72
Statistical Analysis of BPD Cases.....	73
Comparison with Symptom Clusters.....	74
CHAPTER 4: RESULTS	76
BPD SYMPTOM-LEVEL ANALYSIS.....	76
<i>BPD Symptom Scale Properties</i>	76
<i>Item Overlap Between Constructed BPD Scale and the ACA and CBCL Sub-Scales</i>	77
<i>Distribution of BPD Scale Scores</i>	79
<i>Inter-Scale Correlations</i>	80
C-PTSD SYMPTOM-LEVEL ANALYSIS.....	82
<i>C-PTSD Symptom Scale Properties</i>	82
<i>Item Overlap Between Constructed C-PTSD Scale and the ACA and CBCL Sub-Scales</i>	83
<i>Distribution of C-PTSD Scale Scores</i>	85

<i>Inter-scale correlations</i>	86
BPD CASE-LEVEL ANALYSIS	86
<i>Defining BPD cases</i>	86
<i>Mental health difficulties of BPD cases as measured by ACA and CBCL scale scores</i>	88
<i>Overlap of BPD cases with empirically-derived ACA symptom profiles</i>	90
C-PTSD CASE-LEVEL ANALYSIS	91
<i>Defining C-PTSD cases</i>	91
Step 1: Defining PTSD Cases.	91
Step 2: Identifying Adolescents who meet Case-ness for the 'Complex' criteria.....	91
Step 3: Defining Complex PTSD Cases.	92
<i>Overlap of C-PTSD cases with empirically-derived ACA symptom profiles</i>	93
CHAPTER 5: DISCUSSION	94
SUMMARY OF RESULTS	94
<i>Symptom-Level Analysis</i>	94
<i>Case-Level Analysis</i>	95
EXPLANATION OF FINDINGS AND PREVIOUS RESEARCH	96
<i>Symptom Level Analysis</i>	96
Borderline Personality Disorder Scale.	96
Complex Post-Traumatic Stress Disorder Scale.	97
Developmental Trauma Disorder.	99
Correlations between BPD and C-PTSD Scales and the ACA Sub-Scales.	100
<i>Case-Level Analysis</i>	102
BPD	102
C-PTSD	104
PTSD:	104
C-PTSD:	105
Symptom Profiles	106
DIFFERENT CONCEPTUALISATIONS OF COMPLEX TRAUMA AND ATTACHMENT SYMPTOMATOLOGY	107
LIMITATIONS OF THE PRESENT STUDY	108
RECOMMENDATIONS FOR FUTURE RESEARCH	110
IMPLICATIONS OF THE PRESENT STUDY	112
CONCLUSION	113
REFERENCES	115
APPENDIX 1	150

Table of Tables

Table 1. *Final Scale for BPD*

Table 2. *Final Scale for C-PTSD*

Table 3. *Diagnostic Criteria for Developmental Trauma Disorder*

Table 4. *BPD Scale Item-Rest Correlation and Item Prevalence*

Table 5. *ACA Sub-scales that Selected BPD Items Sit in and Items Selected From CBCL*

Table 6. *Distribution of BPD Scale Scores*

Table 7. *Correlations Between BPD Scale and ACA Scale Scores*

Table 8. *Item Rest Correlation and Prevalence of Items in the C-PTSD Scale*

Table 9. *ACA Sub-scales that Selected C-PTSD Items Sit in and Items Selected from CBCL*

Table 10. *Distribution of C-PTSD Scale Scores*

Table 11. *Correlations Between C-PTSD Scale and ACA Scale Scores*

Table 12. *Number of Adolescents who met Criteria for BPD*

Table 13. *Distribution of Adolescents who met BPD Criteria*

Table 14. *BPD Cases (N=19) Mean ACA scale scores*

Table 15. *BPD Cases (N=19) Mean Mental Health Scores (CBCL Syndrome Scales, CBCL DSM-Oriented Scales)*

Table 16. *Overlap Between BPD cases and ACA Symptom Profiles*

Table 17. *Number and Percentage of Adolescents who met Criteria for Criteria 4, 5 and 6 of C-PTSD*

Table 18. *Number of Adolescents who met 1, 2 or 3 Criteria for Disturbances in Self-Organisation*

Table 19. *Number of Adolescents who met PTSD Criteria in Conjunction with Each Individual DSO Criterion*

Table 20. *Number of C-PTSD criteria met*

Table of Figures

Figure 1. *Symptom profile types: Mean ACA scale scores for 8 groups identified through K-means cluster analysis (n=113) ^a*

Figure 2. *The BPD means plotted for each ACA sub-scale on the ACA Symptom Profile*

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Abstract

Experiencing maltreatment in the early developmental years has consistently been shown to impact brain development and attachment relationships, thus leading to a range of functional impairments in the adolescent years. Complex attachment and trauma related symptomatology is presently not well conceptualised within diagnostic classification systems. Three diagnostic constructs encompass some of this complexity, namely Borderline Personality Disorder (BPD), Complex Post-Traumatic Stress Disorder (C-PTSD) and Developmental Trauma Disorder (DTD). The aim of the present study was to test the validity and coherence of these three constructs among a sample of 230 adolescents residing in out-of-home care. The present study analysed data from the CICS adolescent survey. ACA and CBCL items were used to derive new Complex Post-Traumatic Stress Disorder (C-PTSD) and Borderline Personality Disorder (BPD) scales. A scale for Developmental Trauma Disorder (DTD) was unable to be created due to limitations within the construct. Results showed 19 adolescents met BPD case-ness, and 3 adolescents met C-PTSD case-ness, furthermore, 2 of the C-PTSD cases also met criteria to be a BPD case. Concerns regarding working with singular diagnostic constructs and applying the diagnostic framework to this population are discussed, as are implications for clinical practice and recommended research directions.

Chapter One: Introduction

Mental Health of Adolescents in Care with a Maltreatment History

Background to Severe Maltreatment and Entry into Out-of-Home Care

Experiencing maltreatment in childhood is known to be a widespread problem with huge implications for mental health and quality of life. WHO defines child maltreatment as “the abuse and neglect that occurs to children under 18 years of age. It includes all types of physical and/or emotional ill-treatment, sexual abuse, neglect, negligence and commercial or other exploitation, which results in actual or potential harm to the child’s health, survival, development or dignity in the context of a relationship of responsibility, trust or power” (World Health Organisation, 2019). It is known that in the majority of child maltreatment cases (up to 88%), the perpetrators are biological parents, and furthermore, about half of the perpetrators are females (De Bellis, Nooner, Scheid, & Cohen, 2019). International estimates are that approximately one in three children are victims of physical abuse, and approximately 25% of girls and 20% of boys experience sexual victimization (D'Andrea, Ford, Stolbach, Spinazzola, & van der Kolk, 2012).

When child protection services become aware of a child experiencing maltreatment in their family home, they may investigate the situation further. Child protection services may investigate a family due to reports of substance abuse, exposure to intimate partner violence, neglect of a young person or a young person’s direct experience of physical, sexual or emotional abuse (Barber & Delfabbro, 2004). Environments where children and adolescents are exposed to these events are deemed unsafe for the young person to be residing in, and when a young person’s safety cannot be assured, that young person is often removed from the home (Pecora, White, Jackson, & Wiggins, 2009) in an effort to minimise the negative effects of these experiences on a young person’s development. When these children and

adolescents are removed from their home, child protection services place them in alternative out-of-home living placements.

Current policy guidelines and best practice efforts in many western countries have moved towards preserving existing families and reuniting them (Australian Institute of Health and Welfare, 2008), however in the USA, 21.5% of confirmed victims of child maltreatment were placed in foster care, either with a relative, non-relative or in non-family residential treatment centres in 2006. Furthermore, children and adolescents are typically staying in their out-of-home care placement for at least 2 years (Pecora et al., 2009). Out-of-home care placements can include numerous short term, long term and permanent living arrangements including; Non-Family Placement, where the caregiving is provided by a family that is not known to the young person, Kinship Placement, where the young person is cared for by a relatives, Child and Family Support Services, Family Home Placements, Residential Placements, and Other Supported Accommodation (Child Matters, 2019).

The Mental Health of Maltreated Young People, Including those Placed into Care

Research has suggested that adolescents who have been removed from their home and placed in out-of-home care are likely to have lower levels of mental wellness, likely as a result of their pre-care exposure to neglect, disrupted attachment relationships and experiences of maltreatment (Tarren-Sweeney, 2018). It is possible that experiencing maltreatment can both lead to the development of psychiatric symptoms, or exacerbate already present psychiatric symptoms in a young person (R.Mercier, Masson, Bussi res, & Cellard, 2018). Latent Vulnerability Theory (McCrory & Viding, 2015) suggests that there are changes that occur in a child following experiences of maltreatment, that may not immediately manifest as clinical concerns, but are still associated with increased risk of developing future psychiatric disorders. *Latent* refers to a state that exists but has not yet

manifested. Therefore, adolescents who experience maltreatment and neglect are likely to be categorised by significant degree of latent vulnerability, meaning there is possibility that psychiatric symptoms may not be evident until later on in their development. Either way, evidence suggests that adolescents who have experienced maltreatment are 2.7 times more likely than their non-maltreated peers to be diagnosed with a mental illness (Karatekin, Almy, Mason, Borowsky, & Barnes, 2018).

Very little information is known regarding the scale and complexity of mental health problems that adolescents specifically in foster care experience. The studies that have investigated the mental health of adolescents in care have many limitations including small sample sizes (Hornick, Phillips, & Kerr, 1989; Vis, Handegård, Holtan, Fossum, & Thørnblad, 2016), participants who had only been in out of home care for a short time (McWey, Cui, & Pazdera, 2010), and participants that had not consistently been in care over time (Pilowsky & Wu, 2006), thus making it challenging to recognise the developmental outcomes of adolescents in care.

Adolescents who have had involvement with foster care following maltreatment experiences are believed to be at higher risk for developing psychiatric symptoms than their peers who were never placed in foster care (Pilowsky & Wu, 2006), thus making these adolescents in out-of-home care a highly vulnerable population. Data from the UK suggests almost 50% of children and adolescents who reside in care meet criteria for at least one psychiatric disorder, where in comparison, 10% of their not-in-care peers met criteria for a psychiatric disorder (House of Commons Education Committee, 2016). In regards to residential care, a sample of 183 French adolescents showed 49% had at least one mental illness diagnosis, 2.5 to 3.5 times higher than the their not-in-care peers (Bronsard et al., 2011). A Dutch foster-care sample showed 47.5% of those with difficulties fell in the normal range, 15.9% fell in the borderline range were and 36.6% fell in clinical ranges (Goemans,

Tarren-Sweeney, van Geel, & Vedder, 2018), thus providing evidence to suggest why young people who are placed in statutory care following maltreatment are greatly over-represented in mental health services.

Complex Symptomatology not Adequately Conceptualised in the DSM

Some adolescents with mental health problems may meet clinical level criteria for psychiatric disorders, however others experience symptoms that cannot be confined to one diagnostic entity and instead present with a complex array of symptoms. A study by Tarren-Sweeney (2013c) on the mental health of children in out-of-home care, shows 35% of children had difficulties at a clinical level that could be seen as discrete mental disorders and comorbidity, however another 20% showed complex attachment and trauma related symptoms that is not adequately captured by existing diagnostic frameworks in the DSM or ICD classifications. While the study has not yet been replicated on an adolescent population, the children's data highlights that 20% of children in care showed such complexity in relation to their psychiatric symptoms that current diagnostic frameworks are unable to account for it, and since it is these children that are growing up and often becoming adolescents-in-care, it is possible that the same complexity exists in the adolescent population. Older age has been associated with increased mental health problems in preadolescent children (Heflinger, Simpkins, & Combs-Orme, 2000; Meltzer, Gatward, Corbin, Goodman, & Ford, 2003), however evidence from (Tarren-Sweeney, 2018) suggests that these problems do not necessarily continue into adolescence.

In a sample of adolescents in care, Tarren-Sweeney (2013a) highlights that mental health difficulties were largely relating to emotion and behavioural regulation, difficulties in social relationships and conduct and attention-deficit hyperactivity difficulties. When these mental health difficulties are put altogether, they highlight a population that is experiencing

complex attachment-and trauma-related psychopathology, and this complexity goes beyond what a single diagnosis can encapsulate. In a large amount of cases, many criteria of a range of diagnoses might be met, but often there are not enough symptoms to warrant a full diagnosis, thus leaving young people without a diagnosis that captures the fullness of their symptoms, despite experiencing a large amount of functional impairment (Dejong, 2010).

Diagnostic Disagreement and Inappropriate Co-morbid Diagnoses

There are many common diagnoses that this population of adolescents receive, which are often diagnosed by looking at the most obvious problem the adolescent presents with. Such problems are not necessarily understood in the context of the adolescent's trauma and attachment experiences. Mood and anxiety disorders are often used to provide a diagnostic framework for the low mood and anxious cognitions that adolescents with trauma histories experience (De Bellis et al., 2019; Kessler, Davis, & Kendler, 1997), however it is important to note that the anxiety is often experienced as felt insecurity in interpersonal relationships as opposed to more generalised or trauma induced anxiety (Tarren-Sweeney, 2013c).

Dissociative Disorders can be diagnosed following episodes of depersonalisation and derealisation that were used as maladaptive coping mechanisms by those who have been traumatised. Ford (2009) states that dissociation occurs "when the body automatically shifts from operations of self-regulation to operations of self-preservation" (p. 1), highlighting what can be the brain's natural response to trauma in an effort to protect oneself (Plokar & Bisailon, 2016). Dissociation can also be misunderstood as psychosis in some trauma cases (Braehler et al., 2013), and psychosis has also been associated with experiencing maltreatment in the developmental years (Dvir, Denietolis, & Frazier, 2013).

Symptoms of attachment disorders are commonly found in young people who have experienced maltreatment in the context of their family environment (John et al., 2019).

Symptoms of Post-Traumatic Stress Disorder can also be observed following experiences of maltreatment (Ogle, Rubin, & Siegler, 2013), due to the flashbacks and re-experiencing nature of the trauma significantly impairing a young person's functioning.

Adolescents who have experienced significant trauma can also display significant inattention as a result of the trauma, leading many to be misdiagnosed with Attention-Deficit Hyperactivity Disorder (ADHD) (Clayton, Lee, Cheung, Theule, & Henrikson, 2018), however this is rarely seen on its own in trauma cases, and most often presents alongside other psychiatric illnesses (Tarren-Sweeney, 2013c). Oppositional and Conduct Disorders are also used to give a framework for the defiant, disobedient and damaging behaviours that maltreated adolescents sometimes engage in (McCann, James, Wilson, & Dunn, 1996). Lastly, Autism Spectrum Disorder (ASD) has also been diagnosed in this population due to the severe emotion dysregulation and difficulty initiating and maintaining social relationships that can occur as a result of experiencing maltreatment in attachment relationships (Brenner et al., 2018).

In a sample of adolescents in care, 28% were found to have Conduct Disorder, 26% were found to have Anxiety Disorders, 23% experienced a Depressive Disorder, and 8% were found to be experiencing some kind of Psychosis (McCann et al., 1996), highlighting a strong variation in symptom presentations that can exist in a sample of adolescents in out-of-home care. Some adolescents receive several of these diagnoses as an attempt to account for all of the symptoms the adolescent is presenting with, however multiple diagnoses is not necessarily a helpful experience, nor does it necessarily capture the full range of symptoms that an adolescent in care is experiencing. In order to better understand the difficulty that comes with appropriately diagnosing these symptoms in maltreated adolescents in care, there needs to first be an understanding of the range of symptoms this population presents with and how they occur.

Developmental and Clinical Implications of Exposure to Severe and Chronic maltreatment

Children and adolescents who have been placed in out-of-home care are at risk of developing psychopathology later in life (Choi, Choi, Gim, Park, & Park, 2014), and increasing amounts of research are looking to understand why this is and how the more complex psychopathology develops.

Psychological Frameworks for Understanding Developmental Impact of Maltreatment

Neurological Changes. Children and adolescents experience rapid changes in their brain development, making it a time of great opportunities for them to gain experiences, knowledge and skills, and also making it a time of great vulnerability for them to be exposed to maltreatment (Hodas, 2006). Following the experience of maltreatment, the brain is vulnerable to developing different structural and functional alterations (D'Andrea et al., 2012), thus putting young people at risk for developing a range of cognitive and neuropsychological deficits that may impact their development and functioning throughout the course of their life (Gabowitz, Zucker, & Cook, 2008).

Early Brain Development. Neurogenesis refers to the growth and development process of neurons which are formed in the brain. This occurs actively while the child is still in the womb, but also continues into the post-natal period and across the lifespan but to a lesser degree. Synaptogenesis is the process of creating connections which are formed *between* the nerve cells in the brain. It occurs throughout life to some degree, however is more pronounced at specific times in development; they form very quickly in the child's first two years of life, beginning at prenatal and peaking between 3 to 4 years of age, thus

experiencing maltreatment in these years can have very detrimental consequences. When a child is young, they are experiencing a vast range of situations and their senses are constantly being stimulated. When this sensory stimulation is maltreatment, many synapses in the brain are being created in line with the individual's trauma experience (Dawson, Ashman, & Carver, 2000). When synapses are recognized by the brain as no longer required or not used sufficiently enough they are pruned back, however specific synapses are kept due to the relevancy and increased experience of that synapse, therefore, for children who have experienced large amounts of child maltreatment, their brain will recognize and hold onto these experiences, with their brain circuitry adapting accordingly. When particular neurons and axons are used more regularly, myelination occurs, thus allowing the brain to create quicker pathways to be able to respond faster. When a child has been repeatedly traumatized, the neurons which are created as a result of the child's response to their trauma can become myelinated. Thus, allowing a child to develop automatic responses to their experiences, even without the brain's conscious decision to respond in that way (Dawson et al., 2000).

Neurosequential Model of Therapeutics. Bruce Perry's Neurosequential Model of Therapeutics (NMT) (Perry, 2009) highlights that the brain develops from the bottom up, beginning with the brainstem, responsible for the survival of the body including breathing and heart rate and consciousness; then the diencephalon, responsible for providing sensory information between brain regions and controlling automatic responses in the peripheral nervous system; the limbic system, responsible for managing emotions, memories and stimulation; and finally the cortex, responsible for higher thought processes including problem solving, decision making and speech. The brain develops in complexity as it grows and in order for the higher, more complex parts of the brain (limbic system and cortex areas) to be organised, the lower parts of the brain (brainstem and diencephalon) must also have organised development. Perry (2009) suggests that if early development involves repetitious,

patterned, secure and predictable input, then the later developing brain areas will organise themselves in healthier ways. If the early patterns are more unstable and dysregulated, the limbic and cortex areas will be organised to reflect these experiences, thus explaining why children who have experienced trauma and attachment challenges appear much more dysregulated in emotion, behaviour and relationships (Perry, 2009).

A large amount of the neuroscience literature in maltreatment focuses on the impact of trauma on the later developing brain areas. Maltreatment has been shown to impact functioning in the cortex area, specifically the prefrontal lobe, hippocampus and callosum, brain areas which are responsible for tasks such as holding attention, impulse control, self-regulatory functions, executive functioning and memory (Cook et al., 2005; D'Andrea et al., 2012; Kaiser, Zimmet, Fraser, Liddle, & Roberts, 2018). Furthermore, adolescents exposed to ongoing repeated trauma have been shown to have more deficits in their executive functioning capability than the youth who had experienced a single episode trauma (Op den Kelder et al., 2017). Evidence from R. Mercier et al. (2018) showed that maltreatment can also influence brain regions associated with working memory, verbal episodic memory and intelligence, with small to moderate impact. In addition, maltreatment has also been shown to lead to decreased cognitive functioning and therefore, lowered academic achievement (Bosquet Enlow, Egeland, Blood, Wright, & Wright, 2012).

Attachment System Changes. Attachment Theory suggests that the forming of a secure attachment with a caregiver is a critical milestone in development (Bowlby, 1988). Attachment theory highlights that an infant instinctively attaches themselves to another person who they perceive to be able to better manage the world and can promote the child's safety and survival (Fonagy, Redfern, & Charman, 1997). In the early part of the brain's development, the brainstem is dependent on a healthy and secure attachment with a primary

caregiver who provides the repetition, security and safety required for optimum brain development.

Attachment Styles. Secure attachments teach children developmental competencies including, distress tolerance, agency, and how to communicate effectively, all through role modelling (Cook et al., 2005). Secure attachments teach children how to best cope with different stressors, and how to understand themselves and other people, as well as teaching children a vocabulary that gives them words to identify and describe their emotions in order to increase their ability to express themselves. Furthermore, children who have a secure attachment learn through consistent and safe interactions to trust how they feel and how they perceive the world (van der Kolk, 2005). This confidence lets them know that they are capable of understanding the world and if they don't know how to deal with a situation, they can ask those around them for help. A child's sense of security comes from trusting relationships with parents or caregivers who give the child a sense of understanding and physical and emotional safety (Osofsky, Stepka, & King, 2017).

If parents are perpetrators of maltreatment, if parents are not attuned to their child's emotional needs, or if they have difficulty meeting their child's needs, then children may instead develop an insecure attachment and not learn the skills that secure attachments teach them. Insecure attachment has 3 subtypes: Anxious/avoidant children show minimal anxiety upon being separated from the caregiver, and they show little interest in being close to their caregiver once they are reunited; Ambivalent/resistant children are much more resistant to being separated from the caregiver. They might show distress or be extra tearful upon being separated, and still show difficulty with the separation once they are reunited (Kelly & Palley, 2008); Disorganised/disoriented attachment while still an insecure attachment, is thought to be severely insecure, if not impaired (Fonagy et al., 1997). Disorganised attachment is characterised by more rigid and fixated behaviours when their primary

caregiver figure is present, showing an almost fear-like response upon being reunited with the primary caregiver (Kelly & Palley, 2008). When faced with a caregiver who a child perceives as scary or frightening, a disorganised child may use maladaptive self-soothing strategies such as dissociation or self-harm as a means of coping (Holmes, 2004). Disorganised attachment is the most prevalent attachment style in children who have experienced maltreatment in caregiving relationships throughout their developmental years (Kaiser et al., 2018) and is associated with severe neglect and abuse (Kelly & Palley, 2008).

Experiencing maltreatment in close caregiving relationships may lead children to see their caregiver as a potential threat. This ‘failed protection’ from a caregiver has been found to be significantly associated with increased complexity of trauma symptoms (Winnett, 2014). Optimal development would have children see their attachment figure as a place of safety and comfort, however confusingly to some children, their experiences lead them to see their caregiver as both a threat and a safe person, creating ambivalent, approach-avoidant behaviours (Kaiser et al., 2018). Maltreatment experienced within the context of trusting attachment relationships (e.g. a parent/child relationship) can lead to detrimental outcomes, as highlighted in *Betrayal Trauma Theory* (Freyd, 1994), whereby the experience of multiple severe betrayals in a relationship that was thought to be a close and trusting attachment can then lead to an increased interference across different domains of functioning (Teague, 2013).

Attachment Disorders. Attachment difficulties have been conceptualised in different attachment disorders, namely Reactive Attachment Disorder (RAD) and Disinhibited Social Engagement Disorder (DSED) in the DSM, and Disinhibited Attachment Disorder (DAD) in the ICD. RAD is characterised by an individual finding close attachment relationships difficult, both physically and emotionally (Ellis & Saadabadi, 2019). Furthermore, young people with RAD tend to show less capacity for experiencing positive emotions and often show aggression or unpredictability in their responses to social situations (Minnis, Marwick,

Arthur, & McLaughlin, 2006). Research has suggested that symptoms of RAD persist from childhood into adolescence, suggesting that caregiving disruptions that occur early on in a young person's development can have long-term consequences for the development of RAD (Humphreys, Nelson, Fox, & Zeanah, 2017).

Intrusive and impulsive behaviours in relationships are included in both DAD and DSED. Young people with these attachment disorders often lack restraint around unfamiliar people and are overtly friendly, lacking appropriate boundaries in physicality (Zeanah, Chesher, & Boris, 2016). DSED has been observed in children and adolescents who were residing in out-of-home care (Guyon-Harris, Humphreys, Fox, Nelson, & Zeanah, 2018; Humphreys et al., 2017). Factors such as age at placement, number of placements, and time spent in institutional care all made a young person more vulnerable to developing DSED (Guyon-Harris et al., 2018).

Impact of Maltreatment on Different Domains of Functioning

Combined, these deficits and changes in neurological and attachment systems can lead to clinical level difficulties across many different domains of functioning.

Changes in Affect and Regulatory Capacity. There are numerous symptoms related to affect and dysregulation that are common amongst adolescence who have experienced maltreatment.

Affect: Affective symptoms can include; exaggerated changes in mood, inability to find pleasure in activities they once enjoyed, flat or numbed affect, impulsive anger, and incongruous or inappropriate affect (D'Andrea et al., 2012). Some young people may internalise their emotions relating to their trauma and experience intense feelings of anger, betrayal, resignation, shame, guilt and defeat (van der Kolk, 2005). Furthermore, evidence

has shown that children who have experienced maltreatment also have an increased likelihood of developing depression and attempting suicide (Cook et al., 2005).

Emotional Regulation. Pervasive emotion dysregulation can be a frequent problem in a maltreated population (Wöller, 2006), and research has linked child maltreatment with decreased capacity for emotion regulation in adolescence (Dvir, 2017). Emotion regulation refers to a person's ability to control their own emotional experience and affect, thus a crucial aspect of mental and social wellness. Emotion regulation skills include the ability to observe one's own emotional experiences, being able to control the intensity or length of emotions, and being able to manage different emotional triggers, all of which are skills required in order to appropriately adapt to normal life stressors (Cole, Michel, & Teti, 1994). These emotional regulation skills have been shown to be diminished in adolescents who have experienced maltreatment (D'Andrea et al., 2012).

Children learn to regulate their emotions through observing appropriate responses from their caregivers (van der Kolk, 2005), without this teaching from their caregivers at a young age, adolescents who have been exposed to maltreatment can show deficiencies in their ability to self-regulate and self-soothe which can lead to more pathological ways of coping including; dissociation, chronic numbing or avoidance of experiences or situations which may trigger emotions, and maladaptive coping strategies (Cook et al., 2005). These adolescents can often show intense responses to seemingly minor stressors, not unlike the "emotional burns" metaphor from Linehan (1993) which highlights that when there is a place of pain, the slightest touch (or trigger) will be excruciatingly painful. Severe trauma symptoms have been associated with reduced awareness of emotion, lower levels of emotion acceptance, higher levels of suppressing emotions, difficulty with impulse control and impaired use of emotional regulation strategies (Ehring & Quack, 2010).

Behavioural Regulation. Experiencing maltreatment in childhood can result in the development of under or overcontrolled behaviour patterns that the child employs to help them cope with their experiences. Adolescents who have experienced maltreatment may have learnt highly controlled behaviours as a child, showing compliance with adult requests, having very strong routines and being resistant to these being changed, strong rituals regarding daily habits, and an obsessive control with food intake (Cook et al., 2005). These adolescents can also exert the same control while experiencing emotions, leaving them more vulnerable to developing internalizing problems (Hébert, Langevin, & Oussaïd, 2018). In contrast, other adolescents exposed to maltreatment may develop under controlled behaviours or display the arousal symptoms of trauma, that can include poor concentration, exaggerated startle response, irritability, sleep difficulties, hypervigilance (Husain, Allwood, & Bell, 2008) and overeating (Papaikonomou & Liebenberg, 2010). These under controlled adolescents tend to have decreased ability to control and regulate themselves and are at risk of developing externalising challenges (Hébert et al., 2018), including obesity (Papaikonomou & Liebenberg, 2010), and aggressive behaviours (Cook et al., 2005). While maltreatment can be the cause of these symptoms, adolescents with these symptoms are often misdiagnosed with disorders such as attention deficit hyperactivity disorder, oppositional defiant disorder or conduct disorder (Cook et al., 2005) as these constructs create a framework for the young person's lack of behavioural control.

Deficits in Mentalisation/Theory of Mind. Attachment security has been found to be significantly correlated with competence in theory of mind (Fonagy et al., 1997). Theory of mind refers to one's ability to "impute thinking states to himself and others" (Sher, Koenig, & Rustichini, 2014), or one's ability to think about thinking. The theory of which, forms the basis for mentalisation. Mentalising includes the ability to reflect on one's own

thoughts and feelings and reflect on what someone else might be thinking and feeling. This is done by interpreting a person's facial expression and gestures, or by considering a person's inner intentions and motivations (Fonagy, Target, Gergely, Allen, & Bateman, 2003). Fonagy et al. (2003) suggest that a secure attachment relationship is how individual's learn the mentalising skills required in everyday tasks. It is through the emotional environment that exists in secure attachment relationships that a child learns about their own emotions as their caregiver appropriately and accurately reflects their emotion back to them (Dozier, Stovall-McClough, & Albus, 2008). Through doing this, the child then learns a vocabulary to express themselves and learns how to identify different emotions they and others are feeling, thus helping to facilitate appropriate emotion regulation skills, empathy and self-awareness. Adolescents who have not been taught mentalising skills and have not had these role-modelled to them are more prone to misinterpreting or over-personalising other people's intentions, motivations and actions, which can lead to relationship turmoil and chaos, thus leading to increased relational breakdowns and interpersonal difficulties.

Deficits in Interpersonal Relationships. An abusive caregiving environment negatively impacts the child's ability to form healthy relationships (Kelly & Palley, 2008), due to children learning how to engage in social relationships from their caregivers. When a child requests interaction from their caregiver, the predictability of their response, or lack thereof, allows the child to form "internal working models" (Bowlby, 1980), a template from which they understand all future relationships and interactions (Cook et al., 2005).

Maltreatment experiences undermine a young person's developing personality and negatively impacts their ability to form fundamental trust in relationships (Kliethermes, Schacht, & Drewry, 2014). Because of their negative attachment experiences with their caregiver, difficulty in relationships or fear of relationships is a key symptom that can

develop (Dorahy et al., 2015). This difficulty in relational functioning is encapsulated by challenges in closeness and engagement with others (Murphy, Elklit, Dokkedahl, & Shevlin, 2018) and by an inability to build and therefore maintain close and intimate personal relationships with others (Elklit, Hyland, & Shevlin, 2014). Adolescents who have experienced maltreatment from their caregivers are at high risk of developing insecure relationships, characterised by a large amount of relational turmoil and chaos, lowered social skills and inappropriate boundaries (including too distant or too clingy). Furthermore, these insecure attachments can lead to greater mental health challenges (Cicchetti, Toth, & Maughan, 2000; Gardenhire, Schleiden, & Brown, 2019) and the development of psychopathology later in life (Dozier et al., 2008; Holmes, 2014).

Changes in Self-Concept and Worldview. Self-concept is defined by Oxford Dictionary as “an idea of the self, constructed from the beliefs one holds about oneself and the responses of others” (Oxford Dictionary, 2019). When adolescents have positive experiences and feel that their caregivers are in tune with their emotions, they learn to see themselves as worthy and competent (D'Andrea et al., 2012), thus building a positive and healthy self-concept. Alternatively, when a caregiver is unavailable, unsupportive, neglectful or abusive, adolescents can internalise this and end up with a view of themselves that is distorted or inaccurate (Fonagy et al., 1997; Kelly & Palley, 2008), leading them to develop a negative self-concept.

Negative self-perception is characterized by shame, guilt and a perceived loss of moral goodness which a person can experience to a large degree following the experience of maltreatment (Dyer, Dorahy, Shannon, & Corry, 2013). Furthermore, young people who repeatedly experience harm or rejection in close caregiving relationships are less likely to reach age-appropriate competencies and because of this are more likely to develop a

perception of them self as helpless, unlovable, and deficient in skills. Valentino, Cicchetti, Rogosch, and Toth (2008) showed this when they found that young people who have experienced maltreatment were more likely to remember incorrect negative information about themselves. When adolescents see themselves in this negative way, their expectation is for other people to reject them (Cook et al., 2005), thus leading to further interpersonal difficulties. This change in self-concept can lead maltreated young people to have negative perceptions, not only of themselves, but also of the world around them (D'Andrea et al., 2012).

Changes in Attention and Consciousness. Because of the impact on the child's brain during the course of maltreatment, an adolescent can experience large impairment in their capacity for concentration and consciousness. This may display itself as dissociative symptoms, challenges with memory, inability to focus or hold attention, and disrupted executive functioning skills (such as problem solving, decision making and planning) (D'Andrea et al., 2012).

Dissociative symptoms are created from trauma memories being difficult to process and make sense of, leading to a “disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behaviour” (American Psychiatric Association, 2013, pg. 291). Symptoms associated with dissociation have the potential to disrupt every area of psychological functioning and are commonly associated with those who have experienced maltreatment in childhood, as the brain sought to find a way to protect itself during the acts of trauma the individual experienced. Perry, Pollard, Blakley, Baker, and Vigilante (1995) highlight that dissociation requires activation of the central nervous system, which is mediated by the brainstem. Chemical changes in the brain can change the individual's perception of the traumatic event,

causing alterations in the persons understanding of their current reality, thus leading to a dissociative experience. The brain is organised in a use-dependant fashion, therefore the more a child stays in a state of dissociation, the more likely they are to re-experience dissociation throughout their lifetime (Perry et al., 1995).

Evidence from Endo, Sugiyama, and Someya (2006) suggests that maltreated children may experience dissociative symptoms that present similarly to ADHD, thus leading to diagnostic confusion for practitioners. Dissociation following maltreatment has been linked to deficits in attentional control (Cromer, Stevens, DePrince, & Pears, 2006) which may assist in explaining why young people with maltreatment histories can often receive an ADHD diagnosis (Clayton et al., 2018). An important distinction to note is that maltreated children who display dissociative symptoms often meet criteria for a dissociative disorder and ADHD, whereas non-maltreated children with ADHD do not meet criteria for a dissociative disorder (Endo et al., 2006).

Differential Effects of Maltreatment Exposure

Age at Time of Exposure. Each brain area is crucial for the healthy development of a young person, and each area has its own timeframe for development, thus allowing different brain areas to be more sensitive at different times to experiences that may reorganise or disrupt the brain's development. Recent data from neuroimaging studies investigated the neurobiological impact of maltreatment, showing there is a difference in brain development depending on the timing and the type of trauma the young person is exposed to (Kaiser et al., 2018). Therefore, the same traumatic experience will have a very different impact on the child, depending on whether they are 12 months, or 5 years old. If brain impairment occurs in utero (such as exposure to drugs, alcohol or mothers stress), or in early childhood (such as experiences of neglect or abuse), this can create a “cascade of dysfunction” that can disrupt

typical brain development, leading to potentially drastic changes in an individual's developmental trajectory which can be observed in adolescence (Perry, 2009).

Proximity of Trauma. Maltreatment at the hands of one's primary caregiver is the most toxic form of harm. Experiencing adversity in the context of maladaptive family functioning (e.g. family violence, parental mental illness, substance misuse, criminality, abuse and neglect) has been found to be the most strongly correlated to psychiatric disorders (Green et al., 2010). Evidence showed that adolescents who reported experiences of maltreatment by their caregivers (e.g. physical, sexual or emotional abuse, neglect or exposure to domestic violence), were 60% more likely to experience internalising problems than those who had experienced other traumas (e.g. natural disaster, serious accident/illness or chronic poverty) (Greeson et al., 2011). Evidence suggests there is a difference in presenting symptomatology between those who had experienced repeated trauma in caregiving relationships, and those who had experienced a singular traumatic episode in a non-caregiving relationship (Kisiel, Fehrenbach, Small, & Lyons, 2009), thus further highlighting the relationship between proximity of trauma and psychiatric outcomes.

Cumulative Trauma. Often differentiating higher-risk from lower-risk maltreated young people is the experience of multiple adversities in their life or cumulative trauma (Raviv, Taussig, Culhane, & Garrido, 2010). Cumulative trauma refers to the tendency for children to have experienced chronic, repeated or multiple traumas (Hodges et al., 2013). The higher the severity of repeated maltreatment, the higher the rate of post traumatic symptomatology and associated complex psychopathology a person experiences (Palic et al., 2016).

Evidence shows that childhood adversities are highly interrelated (Green et al., 2010) and if an individual experiences one childhood adversity, they are more likely to experience additional adverse experiences (Felitti et al., 2019). In a sample of 53 adolescents who had all experienced interpersonal trauma, Foster (2014) found that the average number of interpersonal traumas experienced was 34. Many epidemiological studies looking at childhood adversity have only looked at one type of adversity, however because many adversities are often clustered together, this approach may result in overestimating how important individual adversities are, and not give enough importance to the experience of multiple adversities (Green et al., 2010; Kessler et al., 1997).

Various Maltreatment Exposure. Experiencing an increased number of a range of interpersonal traumas is a strong predictor of negative outcomes (Cloitre et al., 2009; McDonald, Borntrager, & Rostad, 2014; R.Mercier et al., 2018). The number of different types of maltreatment experienced has been significantly associated with symptom severity (Hodges et al., 2013; Palmissano, 2016), and complexity (D'Andrea et al., 2012). Reasons behind this may be due to the fact that different types of maltreatment often lead to different sequelae's of symptoms. For example, physical abuse may lead to increased aggression or anger; emotional or psychological abuse may decrease one's level of self-esteem; and sexual abuse maltreatment may lead to sexual fears and sexual maladaptive behaviour (Briere & Runtz, 1990). In addition, the experience of sexual abuse in childhood has been associated with higher levels of post-traumatic stress and complex trauma symptoms than other trauma experiences (Choi, Klein, Shin, & Lee, 2009). Therefore, those who have experienced all three types of abuse for example, may be at risk of developing a wider set of trauma-related symptomatology. Evidence from Spinazzola et al. (2014) suggests that psychological maltreatment in addition to physical or sexual abuse can lead to the exacerbation of most

psychiatric outcomes. While multiple maltreatment experiences of any type have also been shown to lead to increased severity of symptoms, it can also exacerbate negative symptomatology therefore motivating the individual to adopt maladaptive coping strategies (Hodges et al., 2013) including; dissociation, externalisation or substance use in order to help themselves cope or self-medicate (Briere, Hodges, & Godbout, 2010).

Gender Differences. Exposure to domestic violence has been found to be more likely for male children, whereas sexual abuse has been found to be more likely experienced by female children (D'Andrea et al., 2012; Wamser-Nanney & Cherry, 2018). Furthermore, females have been reported to have higher levels of symptoms than males, in particularly higher internalising symptoms including; depression, dissociation, hyperarousal symptoms and PTSD symptoms (Kerig, Ward, Vanderzee, & Arnzen Moeddel, 2009; Wamser-Nanney & Cherry, 2018). A study from Greeson et al. (2011) looked at the trauma symptoms of adolescents in foster care and noted the differences in symptom patterns between different trauma experiences. Results showed that internalising problems were more likely for females, older adolescents, and those currently living in foster care. The positive association between females and internalising disorders can also be found in a study by Miller and Resick (2007) who found that female adolescents are more likely to develop internalizing disorders following experiencing childhood trauma, whereas men are more likely to develop externalising disorders. However, more recent evidence from a sample of Australian adolescents in care suggests that there is little difference between genders in both their experiences of trauma and their consequent symptoms (Tarren-Sweeney, 2018).

Current Conceptualisation of Complex Symptomatology Manifested by Adolescents with Prior Maltreatment

There is currently a moderate degree of difficulty in conceptualising mental health difficulties of adolescents in care, as shown by the creation of different models and diagnoses. Furthermore, in regards to diagnoses there remains disagreement between academics and clinicians when deciding on which diagnosis, if any, is the most appropriate diagnosis to cater to this population.

Comorbid Diagnoses

Currently many professionals frame this symptom complexity as a series of multiple discrete diagnostic entities, under the term *comorbidity*, which refers to various psychiatric illnesses co-occurring. In the early days of the DSM, it was believed that a client was unlikely to have more than one diagnosis, however this did not reflect the reality in clinical practice (Dell'osso & Pini, 2012), as individuals who had been exposed to repeated trauma in their early developmental years often met criteria for several different diagnoses, as opposed to just one (John et al., 2019). There are two differing perspectives regarding the place of comorbidity. Firstly, allocating numerous diagnoses that are symptom dependent, does not necessarily allow for the understanding of underlying mechanisms which have created each of the symptoms. By applying multiple diagnoses, at times the root cause of maltreatment can either go unnoticed, or not be seen for its value in causing the symptoms (Cook et al., 2005). This can lead to diagnoses being given to a child or adolescent that do not reflect the reality of their trauma context, and these diagnoses strongly impact the course of treatment recommended and the resources allocated to the young person (John et al., 2019). In contrast, comorbidity allows for specific diagnoses to be applied that match the symptoms the young person is exhibiting, regardless of if they fit into a trauma diagnostic framework. However,

despite the argument, D'Andrea et al. (2012) highlights that comorbidity is more often the rule, not the exception for clinicians working with this population.

In children, Attention-Deficit and Hyperactivity Disorder and Oppositional-Defiant Disorder have often been observed as comorbid presentations as have depressive and anxiety disorders (Tarren-Sweeney, 2013c). In adults, the complexity of presentations caused by trauma experiences has also resulted in comorbid diagnoses, often in the way of a comorbid Borderline Personality Disorder (BPD) and Post-Traumatic Stress Disorder (PTSD) diagnosis (Lacy, 2015).

Transdiagnostic Approaches

Through-out the 21st century the *transdiagnostic model* has become more widely recognised, allowing different ways for clinicians to understand the complex array of symptoms portrayed by young people who have endured child maltreatment. This new approach allows clinicians to investigate the underlying processes that may be able to explain the multiple disorders that an individual presents with (Nolen-Hoeksema & Watkins, 2011).

Support is growing in favour of the idea that a single diagnosis isn't as distinct and individualised as originally believed, and instead there is growing support for understanding what is occurring underneath the individual's dysfunction as a way to better understand the comorbidity between diagnoses. (Nolen-Hoeksema & Watkins, 2011). A study by Kessler, Chiu, Demler, Merikangas, and Walters (2005) found that more than 50% of people who have been diagnosed with one disorder, also meet criteria for a second diagnosis, therefore understanding the common threads between them could prove valuable for a clinician's formulation.

The transdiagnostic process allows clinicians to understand the underlying mechanisms that may contribute to comorbid diagnosis, and further understand the diagnoses that are often given together. If there is an underlying mechanism related to numerous

disorders, then applying a transdiagnostic framework to treatment and intervention would allow for individually catered interventions (Nolen-Hoeksema & Watkins, 2011), as opposed to interventions designed for specific diagnoses, thus allowing more effective and successful treatment outcomes. The transdiagnostic model may provide clinicians with a new way of understanding complex trauma and attachment symptoms that aren't fully explained by a single diagnostic construct.

Diagnostic Constructs

There is a large amount of disagreement and uncertainty around diagnosing complex symptomatology (Tarren-Sweeney, 2013c). Several different diagnostic constructs have been created that incorporate the symptoms shown by those who have experienced chronic developmental trauma. The effects of neglect, maltreatment and abuse are profoundly noticeable in the clinical setting and it has been suggested that this highlights the need for a diagnostic construct which is capable of linking the developmental and psychopathological aspects of trauma (Schmid, Petermann, & Fegert, 2013).

Borderline Personality Disorder (BPD)

Origin of BPD. The term “borderline” originated in America in 1938 by psychoanalyst Adolf Stern (Stern, 1938), and was created to describe the often difficult adult patients who fell in the ‘borderline range’ of psychosis and neurosis (Holmes, 2004). Stern used the word ‘borderline’ to refer to clients whose symptoms became worse throughout therapy, and who showed “masochistic behaviour and psychic rigidity” (Biskin & Paris, 2012, pg. 1) suggesting self-protection against any changes required from within the individual or their environment (Biskin & Paris, 2012). In the 1970’s, Borderline Personality Disorder (BPD) began to gain traction in adult psychiatry with research supporting its

validity and by the 1980's it was a recognised diagnosis by the American Psychiatric Association in the DSM-III. These individuals were described as needy, overly emotional and were deemed at high risk of self-harm and suicide. BPD is now an illness used to identify a highly complex and challenging group of patients, who are regularly seen in emergency departments and psychiatric inpatient units. BPD is a severe personality disorder that affects 1-2% of the general population (Loas, Speranza, Pham-Scottez, Perez-Diaz, & Corcos, 2011). It is encapsulated by an inability to tolerate distress, severe emotional lability, disturbances in one's sense of self, impulsive behaviours and a lack of effective interpersonal skills (Conway, Hammen, & Brennan, 2015). Those with BPD also struggle with impulsivity and instability in emotions, cognitions and relationships with self and others (Flynn, Kells, Joyce, Suarez, & Gillespie, 2018).

Diagnostic Criteria. BPD is not diagnosed lightly, and it is a requirement that the individual meets 5 or more of the following criteria to meet diagnostic criteria;

1. Frantic efforts to avoid real or imagined abandonment
2. A pattern of unstable and intense interpersonal relationships characterized by extremes between idealization and devaluation (also known as "splitting")
3. Identity disturbance: Markedly or persistently unstable self-image or sense of self
4. Impulsive behaviour in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating)
5. Recurrent suicidal behaviour, gestures, or threats, or self-harming behaviour
6. Emotional instability in reaction to day-to-day events (e.g., intense episodic sadness, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)

7. Chronic feelings of emptiness
8. Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)
9. Transient, stress-related paranoid ideation or severe dissociative symptoms

To receive a diagnosis, the impairment in functioning must be stable across time and consistent throughout different situations. Furthermore, these impairments cannot be better understood as normal for the developmental stage or socio-cultural environment of the individual. Impairment can also not be a result of substance abuse or a general medical condition (American Psychiatric Association, 2013). As one can see, these symptoms strongly reflect the symptoms shown by maltreated adolescents in care.

Borderline Personality Disorder in Adolescence. It is acknowledged that many features of BPD often break out during the adolescent phase of development (Deborde et al., 2012), however the diagnosis of BPD is both debated and stigmatised in adolescence. One must ask; what is the appropriateness of applying adult criteria during a period of adolescence that is largely fluid in its development? (Koehne, Hamilton, Sands, & Humphreys, 2013). Key concerns with the diagnosis of BPD in adolescence include that the longitudinal validity of the construct is not strong, the evidence of effective intervention is still small, and there is a large amount of stigma attached to the diagnosis (Barnicot & Ramchandani, 2015), particularly in adolescence (Biskin, 2015).

Hutsebaut, Feenstra, and Luyten (2013), suggest that diagnoses of personality disorders in adolescents are just as reliable and valid as they are in adults, due to the fact that personality disorders in young people show more similarities with adults than they do differences. They go on to suggest that BPD should be diagnosed in adolescence where

required for several reasons; when clinicians do not understand the complexity of an adolescent's presentation, it often leads them to focus on only one symptom at a time. When addressing symptoms or problems in isolation, the symptoms are often treated with interventions designed for those symptoms, and not the whole range of symptoms and the underlying cause. This leads all those involved in the case, including therapists, clients and client's families, to feel hopeless as the treatment is not appearing to be effective. Another reason to allow the BPD diagnosis in adolescence is that focusing on personality issues allows a focus on both inter- and intra-personal impairments and focusing on both of these allows for an important treatment target in treating BPD. Finally, early detection, identification and intervention of personality disorders has a much better prognosis, and the developmental stage of adolescence may be a vital phase in the individual's development for treatment to intervene (Hutsebaut et al., 2013).

Another concern regarding applying the BPD diagnosis in adolescence is if the diagnosis would 'stick' over time (Silk, 2008). It is acknowledged that the stability of the BPD construct as defined by the DSM-5 is relatively low in adolescents (Barnicot & Ramchandani, 2015). The DSM-5 does not state any age restriction for the diagnosis of BPD, only that symptoms must persist for longer than one year. That said, the DSM-5 also specifies that it may only be diagnosed in under 18's if the symptoms appear to be "“pervasive, persistent, and unlikely to be limited to a particular developmental stage or another mental disorder” (American Psychiatric Association, 2013) which leaves applying the diagnosis up to each clinicians discretion.

Whatever diagnosis is or is not given to adolescence with these symptoms, these young people are typically the most troubled and vulnerable of the young people that will come into outpatient and inpatient settings. Early intervention is important for reducing symptoms of BPD in adolescence before they "set in" (Miljkovitch et al., 2018). Some

evidence now exists to support the legitimacy of BPD not only in adolescence but across the lifespan (Chanen, 2015) and despite early hesitations in using the diagnosis in clinical settings, there is now a large amount of empirical research that supports the relevance of identifying and diagnosing BPD in adolescence so that treatment can be timely and appropriately informed (Bo, Sharp, Fonagy, & Kongerslev, 2017).

Borderline Personality Disorder and Maltreatment. Whilst the BPD construct is becoming more accepted in the adolescent mental health field, it does not mean it is the most appropriate diagnosis to give to adolescents who are experiencing complex trauma and attachment related symptomatology. Herman (1992) highlights the psychological difficulties that occur as a result of experiencing child maltreatment are not unlike the symptoms that are associated with personality disorders like BPD. Up until recently, empirical research on the relationship between trauma and BPD has been scant, disregarding the role that trauma may play in the development of BPD, however recent research over the last decade has supported the link between trauma and BPD (Sar, 2011; Schmid et al., 2013). Modern developmental models agree that adverse experiences in early childhood are one important part of the sequelae of BPD (Miano, Fertuck, Roepke, & Dziobek, 2017). Approximately 70-80% of those with BPD have experienced trauma that appears to be closely linked to their symptoms (Schmid et al., 2013), and out of the DSM personality disorders, BPD has the highest prevalence of child maltreatment (Sar, 2011). So much so, that a comorbid diagnosis of BPD and Post-Traumatic Stress Disorder (PTSD) is not uncommon, with 30-50% of adult patients with BPD also meeting criteria for PTSD (Lacy, 2015). However, whether BPD is on its own or paired with a PTSD diagnosis, the construct is still thought to be ill-equipped to explain the full sequelae of symptoms associated with experiencing child maltreatment (Classen,

Pain, Field, & Woods, 2006), creating the need for other constructs and frameworks to be explored.

Complex Post-Traumatic Stress Disorder (C-PTSD)

Origin of C-PTSD. The concept of Complex Trauma (Herman, 1992) was created to acknowledge those who have experienced severe, prolonged or chronic trauma (e.g. emotional, sexual and physical abuse and neglect), often within the context of the child's caregiving system, in a way that has impacted the young person's development. Part of the difficulty in understanding the research to date, is the ambiguity of the term 'complex trauma'.

"Complex trauma" as a term is used to refer to multiple or repeated trauma experiences, including trauma of an interpersonal nature (Cook et al., 2005), trauma that is repeated or chronic, and experienced early on in a child's development, (Spinazzola et al., 2005) and occurring within the child's caregiving system (van der Kolk, 2005). Kliethermes et al. (2014) explained complex trauma as "severe events that tend to be chronic and undermine a child's personality development and fundamental trust in relationships". However, John et al. (2019) suggest that complex trauma is "repeated or prolonged exposure to traumatic events perpetrated within the caregiving relationship during early childhood", both of which are similar statements describing the type of trauma endured.

While the term 'Complex Trauma' has been used to explain what has happened to a person, the term has also been used to describe the set of symptoms that a person experiences as a result of their trauma. Terr (1991), highlights that 'complex trauma' was originally developed to separate the symptoms of the people who have experienced single-incident traumas and those who have experienced cumulative traumas. Ford (2017) states that complex trauma is a result of "developmentally adverse *intentional* acts by other human

beings (*interpersonal*) that are *inescapable* and lead to persistent insecurity”, suggesting that complex trauma is what occurs as a result of the trauma experience, not the trauma experience itself. Similarly, a study from Papaikonomou and Liebenberg (2010) viewed complex trauma as a wide range of symptoms that a person might experience following experiencing repeated trauma.

The challenge with the “complex trauma” concept is that complex trauma is used to not only refer to the repeated, interpersonal, traumatic events, but also the complexity of symptoms that develop from experiencing severe trauma (Greeson et al., 2011; Johanna et al., 2011; Kliethermes et al., 2014). Thus, making a highly important term appear ambiguous and vague (Greeson et al., 2011).

Why PTSD is Ill-Equipped. Post-Traumatic Stress Disorder (PTSD) was first coined to provide a diagnostic framework for veterans from the Vietnam War, after their functioning was often severely impacted as a result of their experiences at war (van der Kolk, 2014). When it was created, it was acknowledged that the diagnosis only spoke to a small part of post-traumatic psychopathology, therefore many people who experienced chronic and repeated abuse and severe neglect didn’t necessarily fit the symptoms required for a PTSD diagnosis (Hodas, 2006; van der Kolk & Courtois, 2005). *Criterion A* for PTSD in the DSM requires experience of a traumatic event. An event is considered to be traumatic if the event ended in death, physical injury or sexual violation, or if any of these three were threatened in the event (American Psychiatric Association, 2013), therefore, many adolescents who have experienced maltreatment, do not meet this criteria. This definition does not include neglect, loss, emotional abuse or psychological abuse, that doesn’t necessarily do or threaten physical harm to a person, but still has lasting impact on their development. Thus, leaving these young

people not only without a PTSD diagnosis, but potentially without any diagnosis and therefore often prematurely discharged from any psychiatric service that could help.

Furthermore, even if a young person does meet criteria for PTSD, the diagnosis does not adequately capture the impact of these experiences on the child's emotional, social, behavioural and neurobiological development. The PTSD construct is not equipped to explain the interpersonal nature of the trauma and the subsequent symptoms associated with it, thus leaving professionals unsure of where these symptoms sit in terms of diagnostic criteria. Interpersonal trauma is associated with a sequelae of symptoms that are different from PTSD and because of this, in order to fit a diagnostic model a clinical diagnosis is required that understands this complexity as a unique variation from PTSD in its typical form (Choi et al., 2014). Herman (1992) conceptualised Complex Post-Traumatic Stress Disorder (C-PTSD); a diagnostic construct created to describe the severe affect dysregulation and interpersonal difficulties that can develop following chronic experiences of trauma. The disruption of the attachment bond between the child and the primary caregiver is a key variable that separates PTSD from C-PTSD (van Dijke, Ford, Frank, & Van der Hart, 2015). Where PTSD may be considered to be an anxiety based response to a single traumatic event, C-PTSD is considered to capture the maladaptive, long lasting and interpersonal types of traumatization (Sar, 2011). The ICD suggests PTSD and C-PTSD are 'sibling conditions' under a general parent umbrella of 'disorders specifically associated with stress' (Karatzias et al., 2017).

Diagnostic Criteria. In the ICD-11, C-PTSD is defined as “a disorder that may develop following exposure to an event or series of events of an extremely threatening or horrific nature, most commonly prolonged or repetitive events from which escape is difficult

or impossible (e.g., torture, slavery, genocide campaigns, prolonged domestic violence, repeated childhood sexual or physical abuse)” (World Health Organisation, 2018).

Complex PTSD is characterized by first meeting all diagnostic requirements for PTSD at some point during the course of the disorder including;

“1) re-experiencing the traumatic event or events in the present in the form of vivid intrusive memories, flashbacks, or nightmares

2) avoidance of thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events; and

3) persistent perceptions of heightened current threat, for example as indicated by hypervigilance or an enhanced startle reaction to stimuli such as unexpected noises” (World Health Organisation, 2018).

To meet criteria for C-PTSD one must meet PTSD criteria as well as the following three criteria specific to C-PTSD;

1) severe and pervasive problems in affect regulation; meaning dysregulated affect. This refers to difficulty in “managing or recovering from extreme states of affect” (van Dijke, Hopman, & Ford, 2018) thus including both under and over-regulation. Where under regulation involves a limited capacity for applying strategies to support ones emotional experiences and challenges with impulse control and goal-oriented behaviour, over-regulation more refers to limited awareness and acceptance of emotional experiences (van Dijke et al., 2018).

2) persistent beliefs about oneself as diminished, defeated or worthless, accompanied by deep and pervasive feelings of shame, guilt or failure related to the traumatic event. This negative perception of self can vary drastically looking at both low self-esteem and pervasive

feelings of shame and guilt as well as dissociative symptoms such as depersonalisation and amnesia (van Dijke et al., 2015).

3) persistent difficulties in sustaining relationships and in feeling close to others. This relational impairment can involve both avoidance of close relationships for fear of abandonment as well as anxiety as a result of fearing potential abandonment when in relationship with others (van Dijke et al., 2018).

These three additional symptoms that make up a C-PTSD diagnosis are often referred to collectively as “disturbances in self-organisation” (DSO) (Cloitre, Garvert, Weiss, Carlson, & Bryant, 2014; Knefel, Garvert, Cloitre, & Lueger-Schuster, 2015). The disturbances in these area’s cause “significant impairment in personal, family, social, educational, occupational or other important areas of functioning” (World Health Organisation, 2018).

The most recent eleventh edition of the International Statistical Classification of Diseases and Related Health Problems (ICD-11), has incorporated C-PTSD, but the construct has not yet made its way into the DSM. Instead the DSM-5 has their version of C-PTSD titled, Disorder of Extreme Stress Not Otherwise Specified (DESNOS), which some researchers deem the DSM’s equivalent of C-PTSD (Choi et al., 2009; Classen et al., 2006; Zlotnick, Zakriski, Shea, & Costello, 1996). Early research in the 2000’s looks at validating both constructs as a trauma disorder that is more complex than a pure form of PTSD and many researchers have used the terms C-PTSD and DESNOS interchangeably (Classen et al., 2006; Dorahy et al., 2009).

Developmental Trauma Disorder (DTD)

Origin of DTD. Developmental Trauma Disorder (DTD) (van der Kolk, 2007) is the most recent of the trauma constructs and is shaped towards understanding the impact of witnessing or experiencing trauma in primary caregiving relationships and the subsequent

impact of this on a young person's developmental trajectory (Teague, 2013; van der Kolk, 2005). Furthermore, DTD, like Perry's Neurosequential Model (Perry, 2009) recognises that the timing of the exposure to trauma in a child's development impacts the child's subsequent cognitive, social and behavioural outcomes (Schmid et al., 2013). Nader (2011) highlights that there are developmental and functional differences at different ages that show themselves through a child's style of reporting back information, their inter and intra-personal skills, their ability to identify and explain different emotions and their ability to access coping skills and resources. These differences highlight a need for a diagnostic construct that is equipped to manage the dynamic interplay between trauma and development.

Proposed Diagnostic Criteria. To receive a diagnosis of DTD, the experience of a traumatic event is crucial, and it must be ruled out that the disorder began as a result of genetic or biopsychosocial causes (Schmid et al., 2013). Proposed criteria from van der Kolk (2005) for DTD includes;

A. Exposure

- * Multiple or chronic exposure to one or more forms of developmentally adverse interpersonal trauma (e.g., abandonment, betrayal, physical assaults, sexual assaults, threats to bodily integrity, coercive practices, emotional abuse, witnessing violence and death).
- * Subjective experience (e.g., rage, betrayal, fear, resignation, defeat, shame).

B. Triggered pattern of repeated dysregulation in response to trauma cues

Dysregulation (high or low) in presence of cues. Changes persist and do not return to baseline; not reduced in intensity by conscious awareness.

- * Affective.
- * Somatic (e.g., physiological, motoric, medical).

- * Behavioural (e.g., re-enactment, cutting).
- * Cognitive (e.g., thinking that it is happening again, confusion, dissociation, depersonalization).
- * Relational (e.g., clinging, oppositional, distrustful, compliant).
- * Self-attribution (e.g., self-hate, blame).

C. Persistently Altered Attributions and Expectancies

- * Negative self-attribution.
- * Distrust of protective caretaker.
- * Loss of expectancy of protection by others.
- * Loss of trust in social agencies to protect.
- * Lack of recourse to social justice/retribution.
- * Inevitability of future victimization.

D. Functional Impairment

- * Educational.
- * Familial.
- * Peer.
- * Legal.
- * Vocational.

Arguments Against DTD. While (van der Kolk, 2005) has suggested that DTD provides a new way of organising the symptoms associated with child maltreatment, the diagnosis has not yet joined the DSM or the ICD as a credible diagnosis. In 2009, van der Kolk and his team put forward a detailed proposal for including DTD in the DSM-V (van der Kolk et al., 2009) however despite having a credible research backing, this was declined. It has been suggested that one of the main reasons for DTD's lack of inclusion in diagnostic

manuals is that the symptoms van der Kolk lists as DTD diagnostic criteria are too vague and as a result DTD may displace where current diagnoses fit and how the diagnoses fit together (Schmid et al., 2013; Teague, 2013). The diagnostic symptoms for DTD are so broad that it would not only replace PTSD, but also all internalising and externalising disorders that occurred as a result of childhood trauma and poor parenting (Schmid et al., 2013).

Furthermore, there is a large gap between scientific research and clinical practice, where research does not necessarily take into account the realities of clinical practice. This leaves constructs and psychometrics that do not necessarily translate into clinical practice, therefore losing some of their clinical relevance. Moreover, there is a lack of funding available to support research into the area of DTD to prove its validity and reliability (Teague, 2013).

While DTD takes a developmental theory approach to the construct, DTD symptom criteria fails to define age-related symptoms, which is critical as what is occurring in a young child may look different to what is happening in a pre-teen or adolescent. DTD has also been criticised for refraining from taking the impact of resilience in individuals into consideration and furthermore it also assumes mono-causality in the role of mental illness which has not been proven by any evidence to date (Schmid et al., 2013). DTD understands a psychosocial explanation for the causation of disorders and rejects that biological factors may also contribute to them, however similar symptoms can be seen in those with BPD who are not guaranteed to have a trauma history, which suggests a biopsychosocial model may be more appropriate to allow for the interplay of biological factors. Therefore DTD, while having many strengths to its diagnostic construct, may still be ill-equipped to explain what is happening for the adolescents who have experienced chronic trauma in the context of attachment relationships.

van der Kolk and Courtois (2005) address these concerns and highlight that DTD does fit the DSM criteria for ‘mental disorder’ and suggests that while DTD can resemble mood,

anxiety, personality, and attachment disorders amongst others, DTD has validity in its own right stating that developmental trauma disorder is distinct from these disorders, although often co-existing with many of them.

Bremness and Polzin (2014) recommended trauma being viewed as a spectrum, highlighting space for developmental trauma disorder, as well as one-off traumatic events that might be cause for PTSD. While the DSM and ICD are not yet in favour of DTD, the DSM has agreed with diagnostic spectrums in the past (e.g. autism), and a spectrum for trauma disorders may prove to make conceptualising trauma more easily accessible for researchers and clinicians alike.

Chapter Two: Literature Review

Purpose and Procedure

The purpose of the review of literature is to look at the evidentiary support available in regards to the use of each of the three constructs (BPD, C-PTSD and DTD) within the adolescent population. The review aimed to look at the validity, appropriateness, strengths and limitations of each of these constructs in explaining similar types of symptomatology found in young people who have complex attachment and trauma symptomatology. The purpose of investigating each of these constructs is to give the reader an overview of the evidence, or lack thereof, in literature regarding the most appropriate way of conceptualising this complex set of symptoms, and to highlight the underlying mechanisms of the diagnoses. This review gives the reader an idea of the field and provides necessary background as to why this study is so critical.

Selection Criteria

Inclusion Criteria

Studies were included on the basis that they were empirical studies, with data that could be used to either support or refute the use of the specific diagnostic construct within an adolescent sample.

Exclusion Criteria

Studies were excluded on the basis that the trauma experienced by the participants was not in the context of maltreatment (e.g. studies looking at natural disasters, children of war, war veterans, refugees or child soldiers). Further articles were excluded due to the articles focusing on treatments or assessment measures for the diagnosis, and not on the validity of the diagnosis itself.

Search Strategy

Searches were made within the following electronic databases: PsycInfo, CINAHL, Google Scholar, and EBSCOhost. Individual searches were also carried out within specific journals including Journal of Traumatic Stress, Journal of Clinical Child Psychology and Psychiatry and the Journal of Clinical Child & Adolescent Psychology. Searches used the following search terms, which were combined in different ways: borderline personality disorder*, BPD*, complex post-traumatic stress disorder*, CPTSD*, developmental trauma disorder*, DTD*. Several systematic reviews were found and their reference lists were checked to identify any studies that had been missed in the search.

Review of the Borderline Personality Disorder (BPD) Literature

BPD in a Maltreatment Population

The link between maltreatment and BPD has been studied extensively in the adult population, however very little has been produced in relation to adolescents. While there is some research that discusses the appropriateness of the BPD diagnosis in adolescence, comparatively little research has explored the appropriateness of the diagnosis in relation to capturing the complex trauma and attachment symptomatology showed by adolescents in out-of-home care with a history of maltreatment. Research by Ludolph et al. (1990) gives evidence to suggest that there are several risk factors associated with abuse and neglect that can influence the likelihood of BPD development including; neglectful parenting, disrupted caregiver attachments, maternal rejection, inappropriate caregiver behaviour, and abuse.

Helgeland and Torgersen (2004) explored the developmental antecedents of BPD and highlighted that environmental risk factors have a significant contribution to the likelihood that a young person will develop and maintain symptoms that meet BPD criteria. Results showed those with BPD were found to be much more likely to have experienced child

maltreatment, neglect, environmental instability and parental mental illness. These adverse experiences alongside a deficit in protective factors rendered young people much more vulnerable to developing BPD. The sample was a clinical sample from an adolescent psychiatric inpatient unit, therefore the participants residential status is unknown, thus making generalisability to other samples difficult. However, these results still show the link between exposure to maltreatment and the development of BPD symptomatology.

Adolescents who did not have a genetic vulnerability to BPD but who were exposed to physical maltreatment were shown to have twice the level of risk than those who weren't exposed to maltreatment of being in the group with extreme BPD symptoms (Belsky et al., 2012). Atlas (1995) found that 26 out of their sample of 38 female adolescents had a history of maltreatment. Of those 26 who had maltreatment histories, 20 met criteria for BPD. Whereas only 5 adolescents of the remaining 12 who did not experience child maltreatment met BPD criteria. Both of these studies provide evidence to suggest that maltreatment can make a person more vulnerable to developing symptoms consistent with BPD.

Research looking specifically at the role of sexual maltreatment in developing symptoms associated with BPD yields more data. 147 adolescents in a psychiatric inpatient unit showed that those who had a diagnosis of BPD were more likely than their non-BPD peers to have a history of sexual maltreatment (Venta, Kenkel-Mikelonis, & Sharp, 2012). Similar results were found by Infurna et al. (2016) who also found sexual maltreatment in childhood to be an independent predictor of BPD in adolescence. Furthermore, childhood sexual abuse has been linked to BPD in adolescence in two studies by Horesh and colleagues (Horesh, Ratner, Laor, & Toren, 2008; Horesh, Sever, & Apter, 2003), who showed that sexual maltreatment in childhood successfully distinguished patients with BPD from patients with depression, suggesting that there might be something about the nature of sexual abuse that leads to the development of BPD symptomatology. While these studies highlight the

relationship between maltreatment and the development of BPD, the diagnosis of BPD in adolescence remains disputed.

Evidence Supporting the BPD Construct in Adolescents

Validity of BPD Diagnosis in Adolescence. There is a large amount of debate regarding the validity and reliability of the BPD diagnosis being used in adolescence, however there is some research that supports the construct in this developmental period. Literature looking at BPD in an out-of-home care population is scarce however one study looked at adolescents from 12 to 17 years who resided in a foster care institution in South America (Schäfer, Dornelles, & Horta, 2016). Results showed that different levels of BPD symptoms are observable in adolescents in foster care institutions.

Marton et al. (1989) assessed 35 adolescents with depressive disorder for Axis II personality dysfunction by structured interviews and pencil and paper measures. Personality disorders were previously covered under Axis II diagnoses before the multi-axial diagnostic system was dropped by the DSM-5. Results showed that while 65% met criteria for an Axis II disorder, 30% were shown to meet criteria for BPD, thus, providing evidence for BPD existing in adolescence. Similar results were found in a study by Glenn and Klonsky (2013) who also found 30% of adolescent psychiatric inpatients met criteria for BPD, with each of the nine diagnostic criteria showing good internal consistency in young people from 12 years old. Blais, Hilsenroth, and Fowler (1999) found that BPD can be reliably identified in adolescents and more recently, BPD has been shown to be a valid diagnosis in a random sample of 1363 high school students aged between 13 and 20 years. A regression analysis showed the prevalence of BPD to be 10% for boys and 18% for girls, however scores peaked at 14 years and again in late adolescence (Chabrol, Montovany, Chouicha, Callahan, & Mullet, 2001). A later study by Chabrol et al. (2004) assessed a sample of 616 adolescents

using the Borderline Personality Inventory and confirmatory factorial analysis showed that 6% of the sample met criteria for BPD.

A later study looking at adolescents (N=123) and adults (N=106) showed that 65 adolescents and 50 adults met criteria for BPD. Further statistical analysis was completed to seek out the BPD criteria most efficient as inclusion and exclusion criteria. Results showed no significant differences between adolescents and adults in regards to specific criterion. The adult sample showed no significant outliers that suggested inclusion or exclusion criterions, however fears regarding abandonment were found to be the best inclusion criterion for adolescents (Becker, Grilo, Edell, & McGlashan, 2002). Work by Segal-Trivitz et al. (2006) also found that adolescents and adults with diagnosed BPD showed very similar diagnostic and treatment characteristics, again highlighting little difference between adolescent and adult presentations of BPD.

Key BPD Symptoms in Adolescence. A latent class analysis was conducted using data from a sample of 60 adolescents aged 15 to 18 years, each of whom met criteria for a BPD diagnosis. Results showed two distinct groups of adolescents with BPD; an internalizing group, and an externalising group, with further results suggesting that adolescent's with BPD are a very diverse group with significant variation in personality features (Ramos, Canta, de Castro, & Leal, 2014). In regards to the internalising symptoms, James (1996) found adolescents with BPD to have higher rates of depressive and interpersonal psychopathology including; depression, manipulation, devaluation and a pervasive sense of boredom. A study by Garnet, Levy, Mattanah, Edell, and McGlashan (1994), showed the most stable symptoms in adolescents with BPD were reported to be chronic emptiness or boredom, and inappropriate or intense anger, with the latter highlighting more of the externalising symptoms. Leung and Leung (2009) conducted a confirmatory factor analysis with

adolescents who had a BPD diagnosis and results showed four areas of functional impairment including; affect dysregulation, impulsivity, interpersonal disturbances, and disturbances in cognitions, which covers both internalising and externalising symptoms.

Changes in BPD Symptom Profiles throughout Adolescence. In a sample of 21 adolescents with diagnosed BPD, 33% of them still met criteria for BPD at a two year follow-up, however the symptom profile was not the same, highlighting that while the symptoms may change over time, the criteria for a diagnosis of BPD is still met (Garnet et al., 1994). Crawford, Cohen, and Brook (2001b) found evidence to suggest that adolescents who met BPD criteria at time 1 are still vulnerable to experiencing some level of disturbance in their affect or behavioural disruption at time 2, even if they no longer meet full diagnostic criteria for BPD. Similarly, in a sample of 54 adolescents in an inpatient ward, 17 met criteria for BPD. At a 3 year follow up, 2 still met criteria for BPD, suggesting a large amount of change in their overall presentations. However, many of the young people still experienced a number of BPD symptoms, just not enough to meet criteria, thus suggesting the possibility that a sub-clinical level of BPD-type disturbances may persist over time. The changing of symptom profiles and severity could promote doubt in the stability and validity of the BPD construct in adolescence, however it is to be noted that even in adult populations, longitudinal research shows that 88% of adult participants with BPD achieved remission over 10 years, with reoccurrence of BPD only happening in 6% of cases (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006). Thus showing that even in adult populations, BPD might not present as a consistent and stable diagnosis.

Early Signs of Adulthood BPD Observable in Adolescence. While many can ‘grow out of’ BPD whether it be through time, maturation or intervention, some adolescents with

BPD continue to experience the symptoms into early adulthood. Lewinsohn, Rohde, Seeley, and Klein (1997) assessed a sample of 299 adolescents between 14 and 18 years and then assessed them again at 24 years old. Results showed that of those who had BPD at age 24, early manifestations of BPD could be seen in the adolescent period. Furthermore, in an 8-year longitudinal study, it was found that cluster B symptoms in early adolescence (age 10-14) were strongly related to cluster B symptoms in early adulthood (age 17-24). Thus, showing that personality disturbance in adolescents can be predicative of disturbances in personality in later adulthood (Crawford, Cohen, & Brook, 2001a). This has indirect relevance as BPD was considered to be under the cluster B criteria, however BPD itself was not specifically measured or assessed for. That said, these two pieces of research still provide evidence to show the potential stability of these traits over time, highlighting the potential need for early identification of BPD which could lead to early intervention, ultimately decreasing the rates of BPD in adulthood.

Evidence Refuting the BPD Construct in Adolescents

While some data has shown huge similarities in symptom presentation between adolescents and adults (Becker et al., 2002; Segal-Trivitz et al., 2006), one study has shown otherwise. 38 adolescents and 28 adults were assessed separately with the Personality Disorder Examination and then results were compared. Findings suggested that the adolescent sample showed lower internal consistency and less discriminant validity than the adult sample. Thus, overall concluding that there could be limitations and well-founded doubts in regards to applying a diagnosis designed for adults to a population of adolescents (Becker et al., 1999).

Stability of BPD Diagnosis in Adolescence. A large argument regarding the validity of BPD in adolescence is looking at the stability of the diagnosis over an already fluid developmental period and numerous studies have investigated this. While the DSM-5 requires that the symptoms be stable across time, majority of evidence looking at the stability of BPD in the adolescent population suggests that these symptoms cannot be considered stable in this developmental stage. Levy et al. (1999) looked at a sample of 165 adolescents and found that at baseline, adolescents who had personality disorders experienced significantly more impairment in their daily functioning than those who did not have personality disorders. However, those who had a personality disorder diagnosis at baseline reported decreased impairment at a two-year follow up, and their scores became more similar to the scores of adolescence who did not have a personality disorder. Thus, suggesting that personality disorders in adolescence may reflect more of a point-in-time disturbance as opposed to ongoing, lasting impairment.

Chanen et al. (2004) looked at the stability of personality disorders in 101 adolescents aged 15-18 years old, who were recruited from an adolescent outpatient service in Melbourne, Australia. Stability was tracked over a two year period and results showed that only 11 of the 101 participants meet BPD criteria at baseline. At follow up 2 years later, 12 adolescents met BPD criteria. While Chanen et al. (2004) understood these results to show consistency of the diagnosis over time, it is important to note that out of the 12 that met BPD criteria at follow up, only 4 of the cases were enduring cases of BPD from baseline, whereas 8 were new BPD cases, thus suggesting that there perhaps isn't the consistency of disorder that was thought to be.

In another sample, 31 adolescent girls had previously been diagnosed with BPD, where the remaining 16 in the sample did not meet criteria. Four years later, only 11 participants still met criteria for BPD and no new cases evolved, suggesting that it is possible

for an adolescent with a BPD diagnosis to remit within a four year period (Biskin, Paris, Renaud, Raz, & Zelkowitz, 2011). It is important to note however, that some of the adolescents were receiving dialectical behavioural therapy (DBT) intervention, and it is unknown whether their BPD remission was due to appropriate intervention or simply the changing passage of time, if not both.

Grilo, Becker, Edell, and McGlashan (2001) observed that there was low-to-moderate stability of personality dysfunction in 60 psychiatric inpatient adolescents at a 2 year follow up, with BPD being the most commonly diagnosed personality disorder. Thus, suggesting again that the level of impairment and associated symptoms may change over time. While this instability of BPD in adolescence is a reoccurring theme, there is no current literature to suggest why this is; it could be due to the adolescent period being a time of marked change in one's development where the 'symptoms' are characteristics prone to the adolescent development phase that a young person matures out of, or alternatively, it could also be due to earlier intervention and effective use of treatment (Miller, Muehlenkamp, & Jacobson, 2008).

In a sample of 733 community-based adolescents, 10.8% were found to meet criteria for BPD. At a two year follow-up, of those that had BPD at baseline, 29% had a diagnosis of "moderate" BPD (defined by 1 SD above the mean on measures of BPD), whereas only 24% still met criteria for "severe" BPD (defined by 2 SD above the mean on measures of BPD), giving evidence to suggest that BPD does not persist overtime for the majority of adolescents, however it did remain clinically significant for a few (Bernstein et al., 1993). Similar results were found by Mattanah, Becker, Levy, Edell, and McGlashan (1995) who also showed evidence of BPD being unstable across the adolescent developmental phase.

As can be seen, there is increasing evidence to support the validity of the BPD diagnosis in adolescence, however the concerns regarding the diagnostic stability still lingers.

and while there are the forming's of a clear relationship between maltreatment and BPD symptomatology, there is a large gap in the literature regarding the application of this diagnosis to a population of adolescents in out-of-home care whom have a history of maltreatment. This could be in part due to the fact that BPD has been a stigmatised diagnosis in adolescence for a long time, or it could also be because more recent diagnoses (e.g. C-PTSD and DTD) have taken the small monopoly in catering for this population.

Review of the Complex Post Traumatic Stress Disorder (C-PTSD) Literature

Very little research has been done validating the use of the C-PTSD diagnosis in the adolescent population. While there is a growing literature base to support the C-PTSD diagnosis in adults with a history of childhood maltreatment (Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Hyland et al., 2017; Knefel et al., 2015; Palic et al., 2016), Brewin et al. (2017) highlight that one can't simply generalise adult data to adolescence due to diagnostic requirements not necessarily reflecting developmental concerns.

Evidence Supporting the C-PTSD Construct in Adolescents.

Perkonig et al. (2016) looked at 10-year longitudinal data with 3021 young people between 14 and 24 years old in Germany. Participants in this study were selected due having experienced either single or multiple interpersonal traumas. A latent class analysis showed 4 distinct classes; a low symptoms class showed low levels of impairment across each symptom, a PTSD class showed increased core PTSD symptoms, a C-PTSD class showed high core PTSD symptoms and strong disturbances in self organisation symptoms and a fourth class that showed disturbances in self-organisation, but low core PTSD scores, suggesting a potential BPD group. Similar class distinctions have also been shown in adult populations (Böttche et al., 2018; Cloitre et al., 2013; Knefel et al., 2015). The reasonable

sample size suggests results are promising in regards to highlighting differentiation between constructs in an adolescent population, however there are limitations in regards to how the results can be interpreted. Information regarding range of traumas or cumulative trauma was not provided, meaning that one cannot draw correlations between the specific diagnosis and the specificity of the individual's trauma experience. Furthermore, participants in this study were from a relatively high socioeconomic status, which raises concerns as to if the distribution of results could be generalised to other groups, including adolescents in out-of-home care.

Data was collected from 159 young people aged between 7 and 17 years of age who had been exposed to one or more traumatic events after the age of 2. A latent class analysis showed that these young people could be differentiated into different trauma classes based on their symptoms (Sachser, Keller, & Goldbeck, 2017). The PTSD class was characterised by increased PTSD symptoms whereas the C-PTSD class was characterised by elevated PTSD symptoms and elevated symptoms in the disturbances in self organisation categories. The results give support for the use of the C-PTSD construct in explaining the more complex trauma and attachment related symptomatology in adolescents. However, these results need to be understood in light of several limitations. First; the intent to differentiate a PTSD class and C-PTSD class was explorative. It was a by-product of the study's main goal which was to explore the success of Trauma Focussed Cognitive Behavioural Therapy in regards to the two different PTSD and C-PTSD samples. Secondly, the criteria for C-PTSD was unknown at the time of the commencement of the study, meaning the criteria and assessment measures that have since been created for C-PTSD were not used in the study, therefore their results are difficult to compare with future findings that will use the established criteria and the empirically established tools to assess for C-PTSD (e.g. the International Trauma Questionnaire).

Data gathered from 208 young people aged 10-18 years who resided in foster care was used for a latent class analysis (Haselgruber, Sölva, & Lueger-Schuster, 2020). Results were in favour of a C-PTSD construct, with findings highlighting a clear C-PTSD group (22.8%), a PTSD group (31.6%) and a group with low symptoms across the board (45.6%). Results highlighted that the C-PTSD group showed the highest rates of child maltreatment out of the group, and furthermore, the C-PTSD group also showed increased comorbid psychopathology and increased impairment across multiple domains of functioning. The study used multiple robust measures including the International Trauma Questionnaire, the Childhood Trauma Questionnaire and the Adolescent Dissociative Experience Scale amongst others, thus showing a wide range of information gathered and appropriate developmental consideration.

C-PTSD is in a unique position of being designed to cater for these complex trauma and attachment related symptoms. However, as can be seen, there is little research available that has worked on validating this diagnosis in a population of adolescents.

Review of the Developmental Trauma Disorder (DTD) Literature

Research in favour of DTD over recent years suggests that DTD may be uniquely associated with ongoing exposure to home environments that are characterised by violence and impaired caregiving (Spinazzola, van der Kolk, & Ford, 2018) suggesting that DTD offers a more concrete understanding of complex attachment and trauma related symptomatology that C-PTSD and BPD cannot. Research validating DTD is still very much in its infancy, with several studies having validated the use of the diagnosis in children, (Ma & Li, 2014; Stolbach et al., 2013), and fewer having validated the diagnosis in adolescence.

Evidence Supporting the DTD Construct in Adolescents

DTD and Trauma Symptoms. Some of the validity research that has been completed in regards to DTD has specifically looked at differentiating DTD from PTSD in a bid to prove that a different diagnosis is necessary for capturing a more complex set of symptoms. A study from Foster (2014) assessed 53 adolescents in an outpatient clinic using the adolescent version of the Structured Interview for Disorders of Extreme Stress (SIDES-A). All participants had experienced interpersonal trauma with 98% having also experienced non-interpersonal trauma. The prevalence of DTD in the sample was 21% ($n = 10$), which was only one person shorter than the 21% ($n = 11$) that was found to have had PTSD. 13% of the sample met criteria for both PTSD and DTD, while 86% met neither diagnostic criteria. Because there were no significant differences between DTD and PTSD in the sample, further breakdown was done looking at the prevalence of each disorder's symptom cluster. These results gave more detailed information that showed DTD symptomatology to be more severe and more common in the sample than PTSD symptomatology, thus giving evidence to support the usefulness and validity of the proposed DTD diagnosis. Results suggest that DTD is better equipped to explain complex trauma and attachment symptomatology resulting from interpersonal trauma than pure PTSD is, due to its developmental understanding of the impact of trauma on different domains of functioning.

In a recent field trial for DTD, structured interviews were used to assess for psychiatric disorders in 236 young people aged 7 to 18 years old (van Der Kolk, Ford, & Spinazzola, 2019). Results showed that 34% of the sample met criteria for DTD and 29% met criteria for PTSD, with the disorders being highly comorbid, along with several internalising and dysregulation disorders. Further results highlight that while DTD symptoms overlap with those of PTSD, DTD still extends on what PTSD can include in regards to specific internalising and externalising behaviours, thus providing evidence to suggest DTD as a

variant to PTSD, where van Der Kolk et al. (2019) suggest it's place could be as a children's version to C-PTSD.

DTD and Trauma Experiences. 236 young people aged 7-18 were referred from pediatric and mental health professionals to a study that investigated if DTD has different traumatic antecedents from PTSD. Descriptive statistical analysis showed that DTD was associated with violence in the child's family or community and more interpersonal traumas whereas PTSD was linked with physical assault and single episode trauma's (Spinazzola et al., 2018). Those who had experienced interpersonal trauma and difficulties in attachment had the highest level of DTD symptoms, suggesting it may be an appropriate diagnosis for adolescence who are reporting complex attachment and trauma related symptoms. Similar results regarding the relationship between interpersonal trauma experiences and DTD were found in a study by Metzner et al. (2019) who looked at a sample of 161 young people aged 1-18 years at an outpatient unit for traumatised patients and found that DTD symptoms were found more commonly in those who had experienced repeated interpersonal trauma's, as opposed to one-off traumatic events. Horner (2018) noted that the adolescents who had experienced more trauma and different types of trauma were more likely to present with skill deficits across a wide range of psychological functions, ultimately leading to meeting criteria for DTD.

Research suggests that adolescents who have experienced an increased number of different types of maltreatment are more likely to experience increased severity and an increased range of symptoms associated with DTD criteria (McDonald, 2016; McDonald et al., 2014). McDonald et al. (2014) had 186 adolescents aged 18 and 19 report on their trauma experiences in childhood and results showed that participants reported a large number of trauma experiences that are not currently covered by the PTSD diagnosis. This research gives

further evidence to support Van der Kolk's ambition to make available a diagnosis that captures a group of people who have been subjected to cumulative trauma's that are outside of what is recognised as a traumatic event in the DSM-5.

Clinicians Perspectives. In an effort to show clinician's perspectives of the usefulness of the proposed construct Ford et al. (2013) asked 472 medical, mental health, counselling, child welfare, and education professionals to make qualitative ratings of the clinical significance of DTD, PTSD, trauma exposure and symptom presentations. Results highlighted that clinicians saw the DTD diagnosis as having clinical utility, that is to say it has usefulness and relevance to their work. Clinicians also indicated that DTD is distinguishable from other diagnoses and furthermore, it's symptomatology and aetiology is not able to be fully accounted for by existing diagnoses.

Evidence Refuting the DTD Construct in Adolescence

Recent research has shown scepticism regarding the DTD diagnosis, highlighting that complex or interpersonal trauma doesn't necessarily lead to a DTD diagnosis. Results from an exploratory analysis looking at a sample of 229 adolescents aged 13 to 20 years old who resided in a maximum security juvenile justice facility in the USA showed that while three quarters of the sample met criteria for exposure to complex trauma, only one quarter met the full criteria for DTD (Horner, 2018). These results are similar to a study by Metzner et al. (2019) who found that 77% of their sample had experienced interpersonal trauma's, however only 6% of the sample met criteria for the proposed DTD diagnosis. Giving further evidence to suggest that while many young people experience symptoms that are not accounted for by a PTSD diagnosis, only a small amount of this client group meet criteria for DTD, raising doubts as to if this diagnosis is adequately equipped for its intended audience.

Symptom Profiles

Another way of viewing the complex trauma and attachment related symptomatology is by looking at symptom profiles instead of diagnostic constructs, which is a contrast to the diagnostic framework previously discussed. Some work has been done in creating symptom profiles for children who have experienced trauma (Tarren-Sweeney, 2013c), with results highlighting the large range of presenting problems and increased severity, creating a picture of complex symptomatology in this population.

Symptom profiles specific to a sample of adolescents in out-of-home care showed similar severity and complexity, with profiles derived from both the Assessment Checklist for Adolescents (ACA) and Child Behaviour Checklist (CBCL) data and notably, there is not the same specificity that has typically defined psychopathology symptom profiles in the past.

ACA profiles showed an increase in complexity from profiles 1 through to 8. Where Profile 1 starts with elevated, sub-clinical levels in 2 sub-scales, and Profile 2 has elevated sub-clinical levels in 3 sub-scales. The problems then increase in complexity and severity from Profiles 3 to 8 where there are numerous problems that meet sub-clinical and clinical thresholds. Profile 8 shows clinical thresholds on every sub-scale, with 3 sub-scales meeting a marked clinical level. Thus, suggesting adolescents in care are exhibiting a highly complex set of symptoms across a range of domains required for functioning, and therefore these symptoms are unable to be understood using current diagnostic models (Tarren-Sweeney, 2020).

The same complexity is observed in the 8 CBCL syndrome scale profiles. Profiles 1 and 2 showed elevated sub-clinical profiles with elevated Anxious/Depressed problems and Attention problems, and elevated Rule-Breaking Behaviours and Aggressive Behaviours, respectively. Profiles 3 and 4 describe somewhat specific problems with indicated clinical

levels in Somatic Complaints and ADHD-type symptoms. Profiles 5 to 8 begin to show different clinical levels being met across the sub-scales, suggesting groups of symptoms that do not appear to neatly fit in any existing psychiatric diagnosis. Therefore these profiles lack any specificity required to match a diagnostic approach as set by the DSM-5 and ICD-11, thus highlighting the diagnostic framework's current inability to cater to this complexity of symptoms (Tarren-Sweeney, 2020).

Conclusion

As can be seen, there are several constructs that have been used to explain similar symptomatology; BPD, C-PTSD and DTD, however a clear and obvious construct remains to be seen, with large evidential and theoretical limitations placed on each construct. As one can see, these diagnostic structures are messy and allow for immense confusion when being compared to one another due to overlap in some diagnostic features but not others, aetiology often being similar, and unclear diagnostic criteria that allows for misinterpretation. In response to the strengths and limitations of these diagnostic constructs evidenced in literature, those looking to use these constructs for diagnostic purposes are still at a loss of which diagnosis, if any, is most appropriate. After the rejection of C-PTSD and DTD into the DSM-5, Bremness and Polzin (2014) reviewed the birthplace of diagnostic constructs, highlighting that psychiatric diagnostic constructs were originally formed as “fixed or static psychopathology states in adulthood”. Therefore, the very nature of these constructs fail to capture the flowing and changing development of an adolescent. It is possible that the desire that researchers have to fit this complexity of symptoms into a neatly packaged diagnostic construct is an unrealistic goal to be working towards. Perhaps the reason an individual construct has not yet been deemed “the best fit” is because there is no one construct that fits at all.

Work from Tarren-Sweeney (2013c) suggests that perhaps no diagnostic construct is appropriate for understanding the complexity of symptoms that occur for this group of adolescents, suggesting that the range of complex symptoms shown by these young people can differ profusely. After Knefel, Tran, and Lueger-Schuster (2016) found strong connections between PTSD and C-PTSD, and a weaker but still present connection between C-PTSD and BPD, they concluded that clear boundaries between diagnostic constructs are unlikely to be found, and instead suggested that psychiatric diagnostic constructs are not discrete entities and should not be viewed as such. It is possible that a diagnostic framework is being pushed that is just not realistic to adhere to for this population. Existing psychiatric diagnoses are not equipped to account for the severe challenges in self-dysregulation that exists for an individual following trauma in close caregiving relationships (Ford, 2011).

Bremness and Polzin (2014) argue that a new diagnostic model is required for working with young people showing complex attachment and trauma related symptomatology, one that addresses both individual and environmental factors, and takes into account theories such as developmental psychopathology, attachment theory, and neuropsychology and plasticity. In doing this, the impact of trauma on a young person's development would be better understood both in research and in clinical practice.

Justification for the Present Study

For the past three decades, researchers have been trying to fit the complex symptom sequelae of interpersonal trauma exposure and disrupted attachment in close caregiving relationships into a concrete diagnostic term, and in doing so they have been met with intense debate (Spinazzola et al., 2018). The effects of neglect, maltreatment and abuse are profoundly noticeable in the clinical setting and Schmid et al. (2013) suggest that this

highlights the need for a diagnostic construct that is capable of linking together the developmental and psychopathological aspects of trauma.

Accurate decision making in regards to diagnosis is an important aspect of trauma-informed care, due to its power to change the perspective through which health workers and caregivers see the young person, and how adolescents see themselves (John et al., 2019). As Hodas (2006) argues, misdiagnosis is a key contributor to poor outcomes following experiences of maltreatment. Increased understanding regarding the symptomatology that adolescents with complex trauma histories experience and how these symptoms fit into associated diagnostic constructs could allow for changes in the way that clinicians and practitioners formulate their cases.

This accurate decision making is difficult not only because of the disagreement in literature regarding the most appropriate construct to use for complex trauma and attachment related symptomatology, but also because relevant research is scant. While there is a lack of empirical research supporting or refuting these constructs in adolescence, there are numerous theoretical and opinion pieces, suggesting that researchers are contributing to the field with their opinions of what should and shouldn't be, instead of relying on valid and reliable empirical research to move these constructs forward. As highlighted, research looking at the relevance of the BPD construct in adolescence with maltreatment histories is very slim. C-PTSD while because of its nature is guaranteed to be focussed on maltreatment, still has very few studies proving its validity in adolescence. DTD while being trauma focussed and having a small research backing, still doesn't have huge empirical evidence to support its use in describing complex trauma and attachment related symptoms in adolescence. Therefore, there is an obvious gap in the research that this current study seeks to fill.

Research Question

This study aims to contribute to the current body of knowledge regarding the ability and the appropriateness of diagnostic constructs to explain complex attachment and trauma related symptomatology, as well as being the first known empirical study to compare these three diagnoses in relation to adolescents in out-of-home care with maltreatment histories.

This study aims to look at these symptoms and their associated diagnostic constructs and ask the question; “To what extent are BPD, C-PTSD and DTD valid constructs for conceptualising complex trauma and attachment related symptomatology manifested by adolescents residing in out-of-home care, who had pre-care exposure to severe and/or chronic maltreatment?”

Chapter 3: Methodology

The present study involved carrying out further analyses of data that had been previously gathered in the CICS adolescent survey.

The Children in Care Study (CICS)

The Children in Care Study (CICS) was completed in New South Wales (NSW) Australia between 2000 and 2009. CICS is a longitudinal study looking at the epidemiology of mental health problems, and the associated developmental trajectories of children and adolescents who reside in court-ordered, out-of-home care including foster and kinship care (Tarren-Sweeney, 2013c). The first of the CICS cross-sectional surveys was carried out between 1999 and 2003 and sourced information from 347 children aged 4 to 11 years old (Tarren-Sweeney, 2013c). The follow up study (Tarren-Sweeney, 2013a), was completed in 2009 when the baseline sample had reached adolescence, and included 85 of the original baseline participants. The third survey in 2011 provided data from an additional group of adolescent participants, also from NSW Australia (Tarren-Sweeney, 2018).

Almost all of the 9000 children who resided in care at the time of the baseline survey had experienced maltreatment from their parents (Tarren-Sweeney, 2008), and majority of them had been court-ordered into out-of-home care, not into temporary placements. Changes in child welfare policy that NSW was making at the time resulted in residential care services being closed around NSW and an increase in foster and kinship placements (Tarren-Sweeney & Hazell, 2006).

Participants

The CICS Follow Up Survey. The CICS follow up survey attempted to include all of the 347 participants from the first baseline survey in an effort to obtain further social care and developmental data for all participants who a) had been part of the baseline CICS survey and b) who continued to reside in foster or kinship care. 70 of these young people currently lived in placements where contact details could not be verified and caregivers could not be contacted by phone. This left 171 eligible participants, of these only 51.5% returned completed questionnaires, giving the study 85 participants, which was 37% of the baseline participants (Tarren-Sweeney, 2013a). Key demographic information was found by comparing the current sample (N=85) with their peers who were eligible but did not participate (N=146). Both groups had a similar mean age at baseline. Participants in the follow up survey included slightly fewer females than the latter group and participants had slightly lower global mental health scores than their eligible peers who did not participate. Furthermore, their mean age of entry into care was 6 months younger than their eligible peers who did not participate and the mean length of the sample's placement stays was one year longer than their peers (Tarren-Sweeney, 2018). These differences were all statistically insignificant and therefore the sample was deemed to be a fair representation of the baseline CICS sample in an adolescent population.

The Adolescent Survey. The CICS adolescent survey was a cross-sectional survey of the mental health of those aged 11 to 17 years, living in NSW in long-term, foster and kinship care as ordered by the courts. Furthermore these adolescents could not already be captured by the CICS follow-up survey. In order to be an eligible participant, the young person's placement address needed to be verified, case supervision for the young person had to be provided by the statutory child welfare agency, and the young person could not be part of the

CICS baseline survey sample. Questionnaires were sent out to caregivers of 290 participants who were eligible, and 146 were completed and returned. The characteristics of this sample did not differ from the CICS Follow Up survey sample in regards to gender distribution, age distribution or geographical location, however this sample was different in regards to the mean length of time they had spent in care. The adolescent survey sample had been in care for 8.4 years on average, while the CICS follow up sample had been in care for an average of 12.8 years (Tarren-Sweeney, 2018). The adolescent survey population was found to be a fair representation of adolescents living in out of home care in NSW at the time of the study.

The total number of adolescent participants was 230. Participants were aged between 11 and 18 years with the mean age being 14.8. Their mean age when they entered care was 6.2 years, and the mean time spent in care was 8.6 years. Age and gender were unevenly distributed though out the sample.

Sources of Data

Both surveys required caregivers to complete questionnaires and mail them back. Alongside the psychometric measures were consent forms, as well as questions relating to other study factors including; the child's current place of residence and placement status, mental health, education and relevant recent life events as at time of data collection. As the data was collected from carers, the adolescents were not directly involved in the process, however they did provide informed consent in regards to their participation in the study (Tarren-Sweeney, 2018).

Mental Health Measures. The adolescent portion of the CICS study investigates a broad range of adolescent's emotional and behavioural difficulties as well as mental health problems using two measures, the Child Behaviour Checklist (CBCL) and the Assessment

Checklist for Adolescents (ACA). The CBCL measures many common mental health difficulties, whereas the ACA measures attachment and trauma related difficulties specific to adolescent's in care.

CBCL. The Child Behaviour Checklist (CBCL) (Achenbach & Rescorla, 2001) is a widely used 118 item carer-report measure. Higher-order Internalizing and Externalizing scales were identified through factor analysis to represent the symptoms which were reported by caregivers in emotional and behavioural domains. The CBCL measures child problem behaviour across 8 different subscales that look at internalising and externalising problems including; anxious/depressed, withdrawn, somatic complaints, rule-breaking behaviour, social problems, thought problems, attention problems and aggressive behaviour. An overall scale for Total Problems was also created in order to allow the measurement of global psychopathology (Achenbach & Rescorla, 2001). Parents or caregivers score each item from 0 “not true in the last six months”, 1 “somewhat or sometimes true”, or 2 “very true or often true”. The CBCL has demonstrated validity and reliability (Achenbach & Rescorla, 2001) and it has been evidenced to be effective in identifying depression and anxiety amongst other mental health concerns (Wadsworth, Hudziak, Heath, & Achenbach, 2001). The CBCL was chosen as it is a widely used standardised psychiatric assessment for measuring mental health problems in young people, however as this psychometric is not designed with this research sample in mind, the CBCL missed some key symptomatology that is shown by adolescents in care with a maltreatment history.

ACA. The Assessment Checklist for Adolescents (ACA) (Tarren-Sweeney, 2013a) is a carer-report psychiatric rating scale with 105 items. The ACA was designed for population and clinical research, and as a clinical assessment tool specifically for adolescents in care aged 12 to 17 years. It is derived from the Assessment Checklist for Children designed for children-in-care, however the ACA's factor structure differs slightly from the children's

measure to account for differences in developmentally-based symptomatology. The ACA has four clinical scales which are the same as the Assessment Checklist for Children (Tarren-Sweeney, 2013c), three clinical scales that allow for developmental differences unique to adolescence and two low self-esteem scales. All items on each scale have been empirically derived through factor analysis. These subscales measure a range of mental health difficulties that are related to complex trauma and attachment. The sub-scales include; Non reciprocal, Social instability/behavioural dysregulation, Emotional dysregulation/distorted social cognition, Dissociation/trauma symptoms, Food maintenance, Sexual behaviour, Suicide discourse, Other clinical items, and low self-esteem scales including; Negative self-image, Low confidence. The ACA has been proved to be a useful measure for assessing mental illness in young people who reside in care as well as young people whom have been adopted from care (Tarren-Sweeney, 2013b).

Further Information Gathered. Numerous risk and protective factors were measured for the baseline sample including; young person's development, education, family of origin, maltreatment experiences and places and types of care. This information was held on the Client Information System (CIS), the database of the child welfare system overseen by the Department of Community Services (DOCS). As this data was only available for the baseline participants, there were only 85 adolescents in the current study's sample who had this additional information available, therefore this information is not able to be reported on in this study. Furthermore, due to limited funding, the study factors measured in the CICS baseline (N=347) and follow-up (N=85) surveys were not measured in the additional adolescent participants recruited to the adolescent survey (N=145).

Ethical Approval

The study was approved by the Human Ethics Committees of the University of Newcastle, Australia (H-2008-0256) and the University of Canterbury, New Zealand (HEC-2008/93). This included approval for research students to perform further analyses on the anonymised dataset for the purpose of completing a research thesis. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committees and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Procedure

The following procedure was used for data collection of both of the surveys. A caseworker from the government child welfare agency, The Department of Family and Community Services (FACS), was seconded to the research team as they had statutory authority to access the database which held all prospective participants information. From this database the information regarding their current care placement and contact details was obtained. The researchers then confirmed the database contact details with the electoral roll and local telephone directory. If addresses were unable to be verified, researchers attempted to phone carers in order to clarify their location. Following confirmation of address, consent forms for both the young person and their caregiver and the questionnaires were sent to the caregivers at the previously verified address. Utmost care was taken in verifying addresses to minimise the likelihood of confidential questionnaires with sensitive information being sent to incorrect addresses. Confidentiality was assured to each caregiver via telephone, with the carers being informed that FACS would have no information regarding who was being contacted to participate in the survey and no access to knowing which individuals had participated or not, excluding the seconded caseworker who was bound by confidentiality

laws. Informed consent forms were signed by both the young person and their caregiver, though the young person was not required to fill out any of the questionnaires. If participants were late in responding they were contacted first by mailed letter and after by telephone in order for the research team to determine their involvement in the study.

The Current Study

The research began with a deductive approach and then incorporated an inductive approach. A deductive approach was chosen first because it allowed us to start with general principles which are assumed to be true and then apply these principles to real cases. Following this, an inductive approach was used which allowed us to examine the symptom profiles already identified using cluster analysis. The deductively-derived BPD cases that matched diagnostic criteria were then compared with the inductively-derived symptom profiles that had already been identified using cluster analysis. As the symptom profiles were examined, this study sought to investigate to what extent the constructs of BPD, C-PTSD and DTD explain the complexity of symptoms that this population is experiencing.

Construction of BPD, C-PTSD and DTD Scales

The first step in this process was to construct continuous scales measuring the three constructs of BPD, C-PTSD and DTD. Step two then required defining the BPD, C-PTSD and DTD cases, from carer-reported scores on ACA and CBCL items. However, in the process of doing this, it was determined that the DTD diagnostic criteria (Table 3) were not sufficiently specific, especially with regards to social relatedness difficulties, for it to be operationalised using ACA and CBCL items (refer to page 69).

New scales for BPD and C-PTSD were created by the writer as part of their research study. The CBCL and ACA were not created with the intention to diagnose mental illness,

therefore many items included in these measures are not relevant to the diagnoses of BPD, C-PTSD or DTD. As a result, the current measures in their entirety were deemed insufficient for the current study and new scales were created. Each item from both the CBCL and ACA measures needed to be reviewed in order to create new scales that are relevant to the constructs being investigated, in doing so, the validity of the study was increased.

The new scales for BPD and C-PTSD were constructed in a series of steps. Firstly, each of these diagnoses were studied intensively, with an examination of the background research in order to become clear on the diagnoses' framework, mechanisms, and associated diagnostic criteria. Following this, specific items were identified on the ACA and the CBCL which appeared, at face value, to be a symptomatic expression of the diagnostic criteria of each of BPD and C-PTSD. Following this, the most relevant items from both the CBCL and ACA were applied to each diagnosis in a diagnostic criterion column. Items selected at this level were then subjected to individual scrutiny as each item was accepted or denied based on the item's ability to adequately describe the criterion as the criterion is described in literature (shown in Appendix 1). This created final scales for BPD and C-PTSD.

Borderline Personality Disorder Scale. Table 1 shows the diagnostic criteria for BPD and the corresponding items that were selected from the ACA and CBCL for the final BPD Scale.

Table 1*Final Scale for BPD*

Diagnostic Criteria	Selected Items (all items are from the ACA unless stated otherwise)
(1) frantic efforts to avoid real or imagined abandonment.	22. Fears you (or other adults) will reject him/her 33. Is convinced that friends will reject him/her 40. Possessive, can't share friends [<i>also criterion #2</i>] 81. Extreme reaction to losing a friend, or being excluded by other young people [<i>also criteria #2 and #6</i>]
(2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation	4. Changes friends quickly 40. Possessive, can't share friends [<i>also criterion #1</i>] 65. Turns friends against each other 81. Extreme reaction to losing a friend, or being excluded by other young people [<i>also criteria #1 and #6</i>]
(3) identity disturbance: markedly and persistently unstable self-image or sense of self	DCI 23. Seems like a completely different person (dramatic change in personality) DCI 24. Thinks he/she is someone or something else
(4) impulsivity in at least two areas that are potentially self-damaging	8. Constantly seeking excitement or 'thrills' 32. Impulsive (acts rashly, without thinking) 47. Risks physical safety, fearless
(5) recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour	72. Attempts suicide 75. Causes injury to him/herself 76. Describes how he/she would kill him/herself 87. Hits head, head-banging 91. Intentionally harms him/herself with knife or sharp implement 100. Threatens to injure him/herself 101. Threatens to kill him/herself CBCL 91. Talks about killing self
(6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)	80. Extreme reaction to minor event (or for no obvious reason) 81. Extreme reaction to losing a friend, or being excluded by other young people [<i>also criteria #1 and #2</i>] 90. Intense reaction to criticism 98. Sudden or extreme mood changes
(7) chronic feelings of emptiness	94. Says he/she feels 'empty' or without emotions
(8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)	52. Shows intense and inappropriate anger 105. Uncontrollable rage CBCL 95. Temper tantrums or hot temper
(9) transient, stress-related paranoid ideation or severe dissociative symptoms	<i>A: Paranoid ideation:</i> 48. Says friends are against him/her CBCL 34. Feels others are out to get him/her <i>B: Severe dissociative symptoms</i> 71. Appears dazed, 'spaced out' (like in a trance) 74. Can't tell if an experience is real or a dream 82. Feels like things, people or events aren't real 86. Has periods of amnesia (e.g. has no memory of what has happened in the last hour)

Complex Post-Traumatic Stress Disorder Scale. Table 2 shows the diagnostic criteria for C-PTSD and the corresponding items that were selected from the ACA and CBCL for the final C-PTSD Scale.

Table 2*Final Scale for C-PTSD*

Diagnostic Criteria	Selected ACA Items (all items are from the ACA unless stated otherwise)
PTSD Symptoms	
1) Re-experiencing the traumatic event or events in the present in the form of vivid intrusive memories, flashbacks or nightmares. These are typically accompanied by strong or overwhelming emotions, particularly fear or horror, and strong physical sensations.	39. Nightmares about specific events or people 73. Can't get scary thoughts or images out of his/her head (not due to watching a scary movie) 77. Distressed or troubled by traumatic memories
2) Avoidance of thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events.	No items
3) Persistent perceptions of heightened current threat, for example as indicated by hypervigilance or an enhanced startle reaction to stimuli such as unexpected noises.	34. Is fearful of being harmed 53. Startles easily ('jumpy') 68. Wary or vigilant (over-alert to danger) DCI 14: Fears he/she might be molested
Disturbances in Self Organisation Symptoms	
4) Severe and pervasive problems in affect regulation.	<i>A. Emotional Reactivity</i> 52. Shows intense and inappropriate anger 75. Causes injury to him/herself 80. Extreme emotional reaction to minor event (or for no obvious reason) 91. Intentionally harms him/herself with knife/implement 98. Sudden or extreme mood changes 105. Uncontrollable rage CBCL 95. Temper tantrums or hot temper <i>B. Absence of emotion / dissociation</i> 71. Appears dazed, 'spaced out' (like in a trance) 74. Can't tell if an experience is real or a dream 78. Does not show pain if physically hurt 82. Feels like things, people or events aren't real 94. Says he feels 'empty' or without emotions
5) Persistent beliefs about oneself as diminished, defeated or worthless, accompanied by deep and pervasive feelings of shame, guilt or failure related to the traumatic event.	6. Complains of not being likeable 23. Feels ashamed 25. Feels worthless or inferior 49. Says he/she is 'bad' or 'no good' 56. Thinks other young people are better than him/her CBCL 52. Feels too guilty
6) Persistent difficulties in sustaining relationships and in feeling close to others.	4. Changes friends quickly 12. Distrusts friends 15. Does not show affection 50. Seems alone in the world (not connected to people or places) DCI 29: Won't communicate with other young people

Developmental Trauma Disorder Scale. Table 3 highlights the diagnostic criteria for DTD. The biggest weakness of the DTD criteria is that it appropriates the majority of the various mental health difficulties that maltreated young people manifest under a single umbrella. Furthermore, the construct's belief that virtually all relational difficulties (e.g., clinging, oppositional, distrustful, compliant) are manifestations of 'dysregulation' is problematic. It infers that almost every type of relational difficulty can be linked to a DTD diagnosis, which is unsatisfactory due to young people in care manifesting a high level of relational difficulties, and many different types of relational difficulties that are best understood in terms of attachment theory and attachment disturbances. Furthermore, the criterion that addresses "regulation in face of trauma cues" is difficult to assess due to unknown triggers of a large amount dysregulatory challenges. Furthermore, it is possible that dysregulated patterns of behaviour become less associated with trauma cues and more associated with neurological patterns of development over time.

Therefore it was decided that it was not plausible to create a scale to measure this construct for the following reasons;

1. Only two of the four DTD diagnostic criteria refer to specific mental disorder symptoms
2. Criterion C is relatively specific and contained.
3. Almost all of the items on the ACA and ACC are potential indicators of DTD criterion B.
4. Individually, most of the items that potentially align with Criterion B lack specificity as markers of 'triggered dysregulation in response to trauma cues'
5. This is particularly so for attachment-related interpersonal relatedness difficulties, which are hallmark difficulties of children in care (Tarren-Sweeney, 2013c, 2018).

6. The descriptors for Criterion 2 ‘Relational Difficulties’ (e.g., clinging, oppositional, distrustful, compliant) are open-ended, diffuse and lack specificity to trauma dysregulation.

Therefore, it was concluded that it is not possible to differentiate young people on DTD Criterion B using the ACA, because the symptomatology is too broad and open-ended. It is important to note, that the decision to not create a DTD scale was not purely a problem with the measurement. More importantly, it highlights a major weakness of the DTD construct, namely that it appropriates virtually all mental health difficulties manifested by maltreated children, and in so doing lacks specificity and validity.

Table 3

Diagnostic Criteria for Developmental Trauma Disorder (van der Kolk, 2005)

<p>A. Exposure</p> <ul style="list-style-type: none"> * Multiple or chronic exposure to one or more forms of developmentally adverse interpersonal trauma (e.g., abandonment, betrayal, physical assaults, sexual assaults, threats to bodily integrity, coercive practices, emotional abuse, witnessing violence and death). * Subjective experience (e.g., rage, betrayal, fear, resignation, defeat, shame).
<p>B. Triggered pattern of repeated dysregulation in response to trauma cues</p> <p>Dysregulation (high or low) in presence of cues. Changes persist and do not return to baseline; not reduced in intensity by conscious awareness.</p> <ul style="list-style-type: none"> * Affective. * Somatic (e.g., physiological, motoric, medical). * Behavioural (e.g., re-enactment, cutting). * Cognitive (e.g., thinking that it is happening again, confusion, dissociation, depersonalization). * Relational (e.g., clinging, oppositional, distrustful, compliant). * Self-attribution (e.g., self-hate, blame).
<p>C. Persistently Altered Attributions and Expectancies</p> <ul style="list-style-type: none"> * Negative self-attribution. * Distrust of protective caretaker. * Loss of expectancy of protection by others. * Loss of trust in social agencies to protect. * Lack of recourse to social justice/retribution. * Inevitability of future victimization.
<p>D. Functional Impairment</p> <ul style="list-style-type: none"> * Educational. * Familial. * Peer. * Legal. * Vocational.

Statistical Analysis

Statistical analysis was completed using STATA (2011), a general-purpose statistical software package.

BPD and C-PTSD Symptom-Level Analysis. Once created, the constructed scales were then subjected to statistical analysis by testing the item prevalence and item-rest correlations. Item rest correlations were completed in order to identify to what extent each item correlated with the sum of the other items in the same scale. The scales' internal

reliability was then examined using Cronbach's alpha. Score distributions, means and standard deviations were determined using STATA. Gender and age distributions were analysed using independent samples t-tests. Inter-scale correlations were then used to measure relationships between the scale scores and other scales.

BPD and C-PTSD Case-Level Analysis.

Identifying and Defining the Cases. BPD and C-PTSD cases were identified using a two-step process. Firstly, the adolescents who met each individual criterion as defined by cut-off scores were identified. Secondly, the adolescents who then met case-ness were identified. To meet BPD case-ness this required 5 of the 9 criteria to be met, whereas to meet C-PTSD case-ness, all of the criteria needed to be met.

Cut-off scores for each criterion were obtained by looking at the number of items selected for each criterion, the prevalence of those items, the score distributions, investigating where items are scaled within each criterion and the percentage of adolescents that meet each criterion using different cut-offs. Each of these factors were taken into account when deriving the cut-off scores however on some occasions, cut-off scores proved to be problematic and these were subsequently changed.

BPD. Final cut-off scores for the BPD scale were as follows; criteria 1, 2, 4 and 9b were defined by a score of 3 or higher. Criteria 3, 5 and 9a were defined by a score of 2 or higher. Criteria 6 and 8 were defined by a score of 4 or higher and criterion 7 was defined by a score of 1 (this was a single ACA item used to define the one criterion). Criterion 9 was split in to A and B in order to identify adolescents who met both the paranoid part and the dissociative symptoms part of the criterion. These two variables were then merged into one variable. Once the cut-off scores had been identified for each of the BPD criteria, the number of adolescents who met each criteria was then computed. Following this, the number

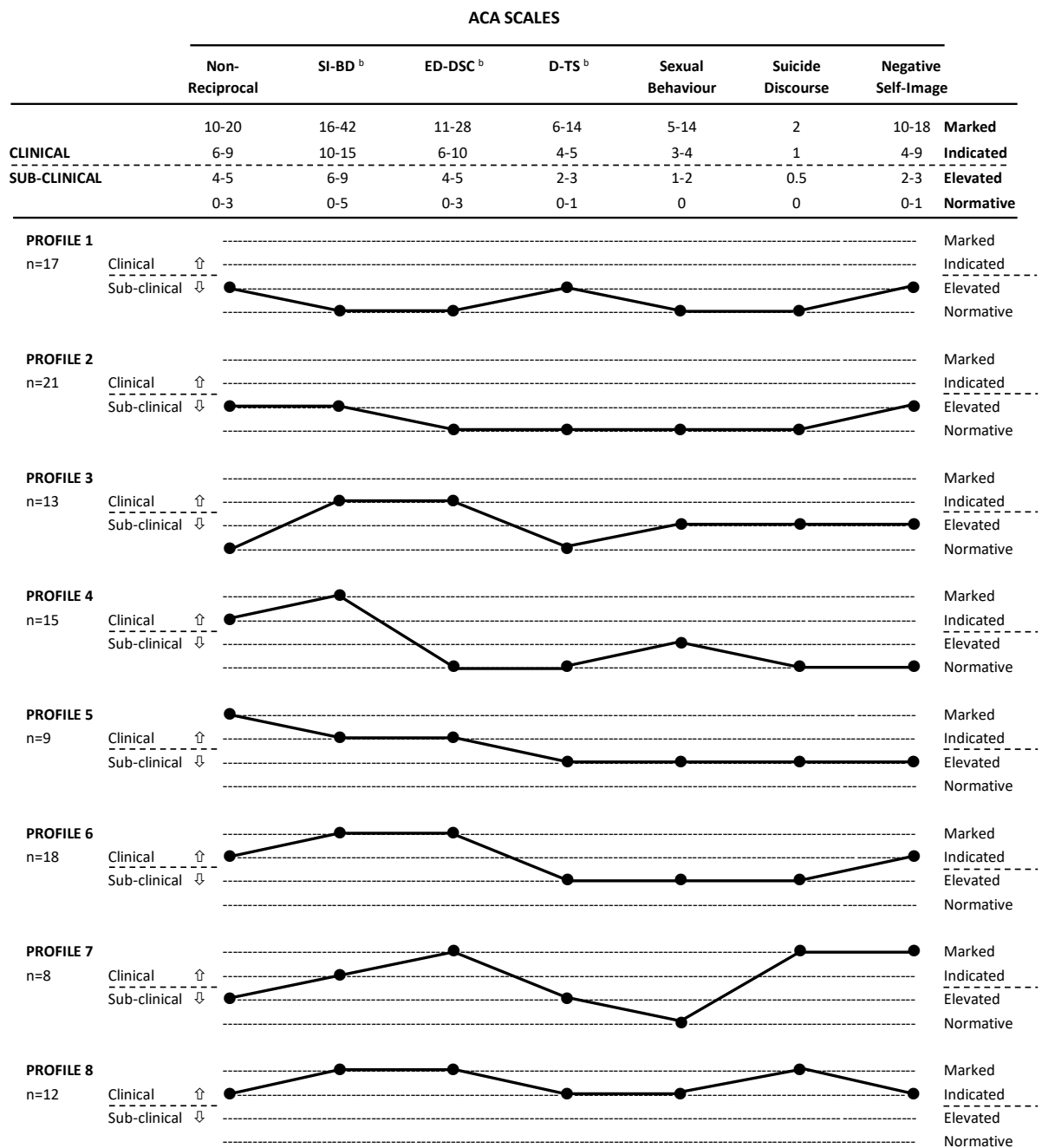
of adolescents who met multiple criteria were identified, giving a final number of adolescents who met BPD criteria. Participants were required to meet at least 5 criteria to meet BPD case-ness (American Psychiatric Association, 2013).

C-PTSD. Criteria 1 and 3 had a cut-off score of 2 or higher and these scores identified who met the simple PTSD criteria. Criterion 4a had a cut-off score of 4 or higher, where criteria 4b, 5 and 6 had a cut-off score of 3 or higher and these were the disturbances of self-organisation (DSO) criteria. Criterion 4 was split into 2 parts and cut off scores were individually created for both the emotional reactivity part and the dissociative part. These two variables were then merged to create one variable as with the rest of the criteria. Adolescents were first identified on whether or not they met simple PTSD criteria, these were identified as one variable. Then adolescents were selected who met each of the 3 disturbances in self-organisation (DSO) symptoms of C-PTSD and these became another variable. Once these variables were selected, the adolescents who met both PTSD and DSO symptoms were calculated, giving a final number of adolescents who met C-PTSD case-ness. Adolescents were required to meet criteria for each individual criterion in order to meet criteria for C-PTSD.

Statistical Analysis of BPD Cases. Mean scores and standard deviations were generated for the BPD cases as a whole, non-BPD cases, and for male and female samples. A chi-squared test was used to identify the gender difference in the sample, following this a two-sample t-test was then computed to compare the mean age of both the BPD cases and the non-BPD cases. Because the final number who met criteria for C-PTSD was so small, no further analysis of the C-PTSD cases was undertaken.

Comparison with Symptom Clusters. ACA symptom clusters were created by Tarren-Sweeney (2020), using a K-means cluster analysis method. Figure 1 shows mean ACA scale scores for 8 clusters . Confirmed BPD cases were compared to these profiles to observe for similarities between the generated symptom profiles and BPD symptomatology. Mean scores and standard deviations were generated for each of the ACA, CBCL and DSM-oriented subscales using only the cases who met criteria for BPD. These means were then plotted on ACA profiles to show the clinical level which these participants difficulties fell in. The mean scores for boys and girls were then placed on the symptom profiles to assess for clinical, borderline or normal range. These results were also reported. This process was not completed with the C-PTSD cases due to having an insufficient number of cases to conduct this analysis.

Figure 1. Symptom profile types: Mean ACA scale scores for 8 groups identified through K-means cluster analysis ($n=113$) ^a



^a Figure reproduced from Tarren-Sweeney (2020)

^b SI-BD = Social instability / Behavioural dysregulation; ED-DSC = Emotional dysregulation / Distorted social cognition; D-TS = Dissociation / Trauma symptoms

Chapter 4: Results

BPD Symptom-Level Analysis

BPD Symptom Scale Properties

Item-rest correlations and item prevalence for the 32 BPD scale items are listed in Table 4, where ‘item-rest’ refers to the correlation between the item score and the sum of all other item scores, and item prevalence refers to the percentage of adolescents having a score of 1 or 2 on that item. Item 23 “says he/she feels ‘empty’ or without emotions” demonstrated poor item-rest correlation in the BPD scale. The Cronbach’s alpha on the BPD scale was 0.92, suggesting a very high level of internal consistency.

Table 4*BPD Scale Item-Rest Correlation and Item Prevalence*

Item	Item-rest (<i>r</i>) correlation ^a	Prevalence ^b
1. Fears you (or other adults) will reject him/her	0.51	16%
2. Is convinced that friends will reject him/her	0.50	24%
3. Possessive, can't share friends	0.60	17%
4. Extreme reaction to losing a friend, or being excluded by other young people	0.58	11%
5. Changes friends quickly	0.58	27%
6. Turns friends against each other	0.31	11%
7. Seems like a completely different person (dramatic change in personality)	0.54	10%
8. Thinks he/she is someone or something else	0.36	3%
9. Constantly seeking excitement or 'thrills'	0.48	25%
10. Impulsive (acts rashly, without thinking)	0.56	57%
11. Risks physical safety, fearless	0.44	24%
12. Attempts suicide	0.33	3%
13. Causes injury to him/herself	0.33	7%
14. Describes how he/she would kill him/herself	0.45	3%
15. Hits head, head-banging	0.28	7%
16. Intentionally harms him/herself with knife or sharp implement	0.34	3%
17. Threatens to injure him/herself	0.42	4%
18. Threatens to kill him/herself	0.44	4%
19. Talks about killing self	0.45	9%
20. Extreme reaction to minor event (or for no obvious reason)	0.66	24%
21. Intense reaction to criticism	0.62	34%
22. Sudden or extreme mood changes	0.57	28%
23. Says he/she feels 'empty' or without emotions	0.14	2%
24. Shows intense and inappropriate anger	0.71	39%
25. Uncontrollable rage	0.73	23%
26. Temper tantrums or hot temper	0.60	49%
27. Says friends are against him/her	0.64	23%
28. Feels others are out to get him/her	0.54	26%
29. Appears dazed, 'spaced out' (like in a trance)	0.43	20%
30. Can't tell if an experience is real or a dream	0.47	10%
31. Feels like things, people or events aren't real	0.42	4%
32. Has periods of amnesia (e.g. has no memory of what has happened in the last hour)	0.41	10%

^a Item-rest correlation (correlation of the item score and the sum of all other items in the scale)

^b Item prevalence = percentage of the study sample (N=230) with item score of 1 or 2

Item Overlap Between Constructed BPD Scale and the ACA and CBCL Sub-Scales

Table 5 shows the items that were selected for the BPD scales, and which ACA scales the items come from, with the CBCL items noted at the bottom. 7 items were selected from the *Social Instability/Behavioural Dysregulation* scale, 9 items from *Emotional Dysregulation/ Distorted Social Cognition*, 5 items from *Dissociation/Trauma Symptoms* scale, 5 items from *Suicide Discourse*, 2 from *Other Clinical Items* and 2 from the *Discarded*

Clinical Items list. While there was not huge discrepancy between each ACA sub-scale and the number of items selected for the BPD scale, some ACA sub-scales were not represented at all, including, *non-reciprocal, food maintenance, sexual behaviours, negative self-image* and *low confidence*. Furthermore, the vast majority of items selected for the BPD scale were selected from the ACA psychometric, with the CBCL being represented by only 3 items.

Table 5

ACA Sub-scales that Selected BPD Items Sit in and Items Selected From CBCL

Social Instability/Behavioural Dysregulation
4. Changes friends quickly
40. Possessive, can't share friends
65. Turns friends against each other
8. Constantly seeking excitement or 'thrills'
32. Impulsive (acts rashly, without thinking)
47. Risks physical safety, fearless
67. Upsets most people (without good reason)
Emotional Dysregulation/Distorted Social Cognition
33. Is convinced that friends will reject him/her
81. Extreme reaction to losing a friend, or being excluded by other young people
80. Extreme reaction to minor event (or for no obvious reason)
90. Intense reaction to criticism
98. Sudden or extreme mood changes
94. Says he/she feels 'empty' or without emotions
52. Shows intense and inappropriate anger
105. Uncontrollable rage
48. Says friends are against him/her
Dissociation/Trauma Symptoms
87. Hits head, head-banging
71. Appears dazed, 'spaced out' (like in a trance)
74. Can't tell if an experience is real or a dream
82. Feels like things, people or events aren't real
86. Has periods of amnesia (e.g. has no memory of what has happened in the last hour)
Suicide Discourse
72. Attempts suicide
76. Describes how he/she would kill him/herself
91. Intentionally harms him/herself with knife or sharp implement
100. Threatens to injure him/herself
101. Threatens to kill him/herself
Other Clinical Items
22. Fears you (or other adults) will reject him/her
75. Causes injury to him/herself
Discarded Clinical Items
DCI 23. Seems like a completely different person (dramatic change in personality)
DCI 24. Thinks he/she is someone or something else
CBCL Items
CBCL 91. Talks about killing self
CBCL 95. Temper tantrums or hot temper
CBCL 34. Feels others are out to get him/her

Distribution of BPD Scale Scores

The distribution of BPD scale scores is reported in Table 6. Scores ranged from zero to 53, with a mean (SD) score of 7.6 (8.7), and the median score being 4. Boys and girls had similar mean (SD) scores of 7.8 (9.0) and 7.3 (8.3) respectively ($t=0.44$, $p=0.66$).

Table 6

Distribution of BPD Scale Scores

Score	N	%	Cumulative %
0	36	15.65%	15.65%
1	34	14.78%	30.43%
2	19	8.26%	38.70%
3	11	4.78%	43.48%
4	17	7.39%	50.87%
5	11	4.78%	55.65%
6	9	7.39%	59.57%
7	7	4.78%	62.61%
8	5	3.91%	64.78%
9	9	3.04%	68.70%
10	5	2.17%	70.87%
11	9	3.91%	74.78%
12	9	3.91%	78.70%
13	3	1.30%	80.00%
14	5	2.17%	82.17%
15	5	2.17%	84.35%
16	6	2.61%	86.96%
17	2	0.87%	87.83%
18	6	2.61%	90.43%
19	4	1.74%	92.17%
20	1	0.43%	92.61%
21	2	0.87%	93.48%
24	1	0.43%	93.91%
25	1	0.43%	94.35%
26	1	0.43%	94.78%
27	4	1.74%	96.52%
30	2	0.87%	97.39%
31	1	0.43%	97.83%
33	1	0.43%	98.26%
36	1	0.43%	98.70%
37	1	0.43%	99.13%
39	1	0.43%	99.57%
53	1	0.43%	100.00%
Total	230	100.00%	

Inter-Scale Correlations

Correlations between the BPD scale and the ACA scale scores are shown in Table 7. *Social Instability/Behavioural Dysregulation* and *Emotional Dysregulation/Distorted Social Cognition* correlated highly with the BPD scale. *Suicide Discourse* was one of the sub-scales with a smaller correlation with the BPD scale, despite having 5 items from the sub-scale included on the BPD scale. *Food Maintenance* and *Sexual Behaviours*, were also low correlating sub-scales however they had no items included on the BPD scale. Further, while *Negative Self-Image* displayed moderate statistical significance in the correlation matrix, it does not feature as an ACA subtype included in the BPD scale.

Table 7*Correlations Between BPD Scale and ACA Scale Scores*

ACA sub-scales	BPD Scale	ACA Total	Non-Reciprocal	Social Instability/ Behavioural Dysregulation	Emotional Dysregulation/ Distorted Social Cognition	Dissociation/ Trauma Symptoms	Food Maintenance	Sexual Behaviours	Suicide Discourse	Negative Self- Image
ACA Total	0.92									
Non-Reciprocal	0.51	0.68								
Social Instability/ Behavioural Dysregulation	0.79	0.88	0.50							
Emotional Dysregulation/ Distorted Social Cognition	0.90	0.82	0.46	0.65						
Dissociation/Trauma Symptoms	0.65	0.65	0.35	0.41	0.52					
Food Maintenance	0.54	0.66	0.41	0.49	0.43	0.46				
Sexual Behaviours	0.47	0.54	0.24	0.46	0.28	0.43	0.35			
Suicide Discourse	0.52	0.39	0.08	0.22	0.43	0.28	0.20	0.40		
Negative Self-Image	0.63	0.62	0.39	0.47	0.65	0.47	0.29	0.27	0.37	
Low Confidence	0.56	0.62	0.61	0.45	0.55	0.45	0.30	0.24	0.21	0.58

C-PTSD Symptom-Level Analysis

C-PTSD Symptom Scale Properties

Item-rest correlations and item prevalence for the 30 C-PTSD scale items are listed in Table 8. Item 19, “says he/she feels ‘empty’ or without emotions”, demonstrated poor item-rest correlation within the C-PTSD scale, the item of which was also an outlier in the BPD scale. The C-PTSD item-rest correlations were generally lower on the C-PTSD scale than the BPD scale. The Cronbach’s alpha on the C-PTSD scale was 0.89, again, suggesting a very high level of internal consistency.

Table 8*Item Rest Correlation and Prevalence of Items in the C-PTSD Scale*

Item	Item-rest (<i>r</i>) correlation ^a	Prevalence ^b
1. Nightmares about specific events or people	0.41	15%
2. Can't get scary thoughts or images out of his/her head (not due to watching a scary movie)	0.44	10%
3. Distressed or troubled by traumatic memories	0.37	16%
4. Is fearful of being harmed	0.31	14%
5. Startles easily ('jumpy')	0.51	17%
6. Wary or vigilant (over-alert to danger)	0.21	10%
7. Fears he/she might be molested	0.30	4%
8. Shows intense and inappropriate anger	0.64	39%
9. Causes injury to him/herself	0.32	7%
10. Extreme emotional reaction to minor event (or for no obvious reason)	0.60	24%
11. Intentionally harms him/herself with knife/implement	0.30	3%
12. Sudden or extreme mood changes	0.54	28%
13. Uncontrollable rage	0.70	23%
14. Temper tantrums or hot temper	0.55	49%
15. Appears dazed, 'spaced out' (like in a trance)	0.46	20%
16. Can't tell if an experience is real or a dream	0.48	10%
17. Does not show pain if physically hurt	0.35	13%
18. Feels like things, people or events aren't real	0.46	4%
19. Says he feels 'empty' or without emotions	0.17	2%
20. Complains of not being likeable	0.56	17%
21. Feels ashamed	0.29	10%
22. Feels worthless or inferior	0.53	21%
23. Says he/she is 'bad' or 'no good'	0.58	14%
24. Thinks other young people are better than him/her	0.47	22%
25. Feels too guilty	0.27	7.3%
26. Changes friends quickly	0.45	27%
27. Distrusts friends	0.49	21%
28. Does not show affection	0.23	31%
29. Seems alone in the world (not connected to people or places)	0.53	25%
30. Won't communicate with other young people	0.44	17%

^a Item-rest correlation (correlation of the item score and the sum of all other items in the scale)

^b Item prevalence = percentage of the CICS combined sample (*n*=230) with item score of 1 or 2

Item Overlap Between Constructed C-PTSD Scale and the ACA and CBCL Sub-Scales

The ACA and CBCL items selected for the C-PTSD scale are shown in table 9. The C-PTSD scale includes 5 items from the *Negative Self-Image* sub-scale, and 2 items from the *Non-Reciprocal* sub-scale, 1 item from the *Social Instability/Behavioural Dysregulation* scale, and 9 items from the *Emotional Dysregulation/ Distorted Social Cognition* scale. 4 items were included from the *Dissociation/Trauma Symptoms* scale, 1 item from *Suicide Discourse*, and 2 from the *Discarded Clinical Items* list. As with the BPD scale, the vast

majority of items selected to make up the C-PTSD scale were from the ACA, with only 2 items from the CBCL being included.

Table 9

ACA Sub-scales that Selected C-PTSD Items Sit in and Items Selected from CBCL

Non-Reciprocal
15. Does not show affection
50. Seems alone in the world (not connected to people or places)
Social Instability/Behavioural Dysregulation
4. Changes friends quickly
Emotional Dysregulation/Distorted Social Cognition
73. Can't get scary thoughts or images out of his/her head (not due to watching a scary movie)
52. Shows intense and inappropriate anger
53. Startles easily ('jumpy')
80. Extreme emotional reaction to minor event (or for no obvious reason)
98. Sudden or extreme mood changes
105. Uncontrollable rage
94. Says he feels 'empty' or without emotions
12. Distrusts friends
Dissociation/Trauma Symptoms
39. Nightmares about specific events or people
71. Appears dazed, 'spaced out' (like in a trance)
74. Can't tell if an experience is real or a dream
82. Feels like things, people or events aren't real
Suicide Discourse
91. Intentionally harms him/herself with knife/implement
Other Clinical Items
77. Distressed or troubled by traumatic memories
34. Is fearful of being harmed
68. Wary or vigilant (over-alert to danger)
75. Causes injury to him/herself
78. Does not show pain if physically hurt
Negative Self-Image
6. Complains of not being likeable
23. Feels ashamed
25. Feels worthless or inferior
49. Says he/she is 'bad' or 'no good'
56. Thinks other young people are better than him/her
Discarded Clinical Items
DCI 14: Fears he/she might be molested
DCI 29: Won't communicate with other young people
CBCL
CBCL 95. Temper tantrums or hot temper
CBCL 52. Feels too guilty

Distribution of C-PTSD Scale Scores

The distribution of C-PTSD scale scores is reported in Table 10. Scores ranged from zero to 43, with a mean (SD) score of 6.65 (7.31) and the median score being 4. Boys and girls had similar mean (SD) scores of 6.85 (7.88) and 6.41 (6.60) respectively ($t=0.45$, $p=0.65$).

Table 10

Distribution of C-PTSD Scale Scores

Score	N	%	Cumulative %
0	47	20.43%	20.43%
1	23	10.00%	30.43%
2	17	7.39%	37.83%
3	15	6.52%	44.35%
4	12	5.22%	49.57%
5	17	7.39%	56.96%
6	17	7.39%	64.35%
7	9	3.91%	68.26%
8	5	2.17%	70.43%
9	4	1.74%	72.17%
10	9	3.91%	76.09%
11	5	2.17%	78.26%
12	6	2.61%	80.87%
13	8	3.48%	84.35%
14	2	0.87%	85.22%
15	7	3.04%	88.26%
16	1	0.43%	88.70%
17	3	1.30%	90.00%
18	3	1.30%	91.30%
19	5	2.17%	93.48%
20	2	0.87%	94.35%
21	2	0.87%	95.22%
22	1	0.43%	95.65%
23	2	0.87%	96.52%
24	1	0.43%	96.96%
25	1	0.43%	97.39%
26	2	0.87%	98.26%
27	1	0.43%	98.70%
29	1	0.43%	99.13%
33	1	0.43%	99.57%
43	1	0.43%	100.00%
Total	230	100.00%	

Inter-scale correlations

Correlations between the C-PTSD scale and the ACA scale scores are shown in Table 11. *Emotional Dysregulation/Distorted Social Cognition* and *Negative self-image* both had a statistically significant correlation with the C-PTSD scale. No ACA sub-scale showed weak statistical significance with the C-PTSD scales, with majority of the ACA sub-scales falling in the moderate range.

The correlation between the BPD and C-PTSD scales was statistically significant at 0.92, however there were 11 items selected from the measure that appeared in both the BPD and the C-PTSD scale. With these 11 items removed the correlation was still statistically significant but less so at 0.76.

Table 11

Correlations Between C-PTSD Scale and ACA Scale Scores

ACA sub-scales	<i>r</i>
BPD Scale	0.91
ACA Total	0.91
Non-Reciprocal	0.63
Social Instability/ Behavioural Dysregulation	0.70
Emotional Dysregulation/ Distorted Social Cognition	0.88
Dissociation/Trauma Symptoms	0.71
Food Maintenance	0.51
Sexual Behaviours	0.42
Suicide Discourse	0.42
Negative Self-Image	0.75
Low Confidence	0.65

BPD Case-Level Analysis

Defining BPD cases

The numbers of adolescents meeting the 9 BPD diagnostic criteria are listed in Table 12. The most common criteria met by this sample were impulsivity ($n=52$), paranoid

ideation/dissociation ($n=49$) and anger ($n=39$). Chronic feelings of emptiness was the least common criterion met ($n=5$), followed by identity disturbance ($n=13$).

Table 12

Number of Adolescents who met Criteria for BPD

	N. met criterion	% met criterion
(1) frantic efforts to avoid real or imagined abandonment.	26	11.30%
(2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation	25	10.87%
(3) identity disturbance: markedly and persistently unstable self-image or sense of self	13	5.65%
(4) impulsivity in at least two areas that are potentially self-damaging	52	22.61%
(5) recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour	23	10.00%
(6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)	38	16.52%
(7) chronic feelings of emptiness	5	2.17%
(8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)	39	16.96%
(9) transient, stress-related paranoid ideation or severe dissociative symptoms	49	21.3%

Table 13 reports the distribution of number of BPD diagnostic criteria met by participants. More than half of the participants (56.1%) met nil diagnostic criteria, while no participant met all 9 criteria. As outlined in the Methods chapter, BPD cases are defined for the present analyses as participants who met 5 or more BPD diagnostic criteria. As revealed in Table 12, 19 participants (8.2%) were thus defined as BPD cases. The gender discrepancy between the number of male ($N=8$) and female ($N=11$) BPD cases was not statistically significant ($\chi^2=1.25$, $P=0.26$). The age distributions of BPD cases (mean age=15.28) and non-BPD cases (mean age=15.32) were also not significantly different ($p=0.10$).

Table 13*Distribution of Adolescents who met BPD Criteria*

N. of criteria met	N	%	Cumulative %
0 criteria met	129	56.09%	56.09%
1 criterion met	39	17.96%	73.04%
2 criteria met	23	10.00%	83.04%
3 criteria met	8	3.48%	86.52%
4 criterions met	12	5.22%	91.74%
5 criterions met	10	4.35%	96.09%
6 criterions met	2	0.87%	96.96%
7 criterions met	5	2.17%	99.13%
8 criterions met	2	0.87%	100.00%
	230	100%	

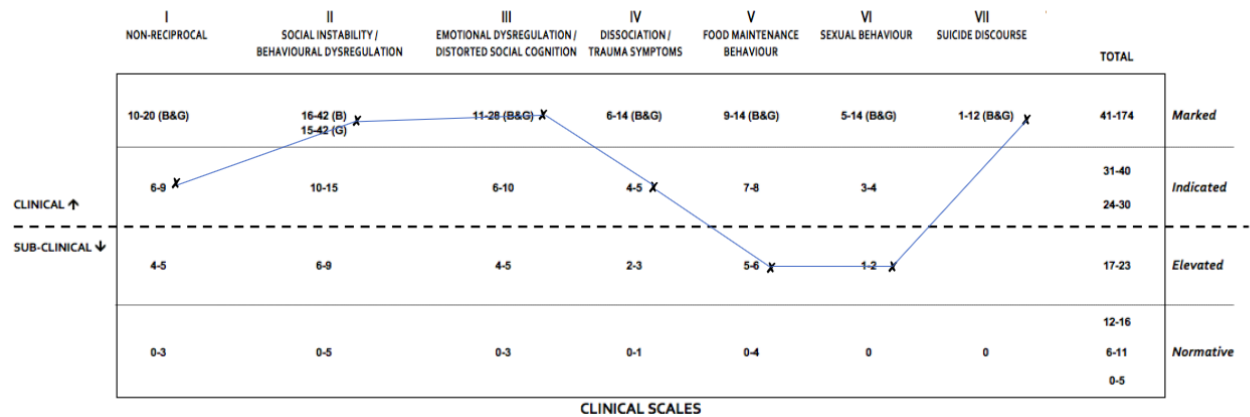
Mental health difficulties of BPD cases as measured by ACA and CBCL scale scores

Table 14 lists BPD cases' mean scores on the ACA scales. Figure 1 shows the symptom profiles for the ACA, thus showing where the average BPD case is sitting in relation to normative, elevated, indicated and marked clinical level. The ACA symptom profile shows the mean scores on 3 of the sub-scales including *Social Instability and Behavioural Dysregulation*, *Emotion Dysregulation/Distorted Social Cognition* and *Suicide Discourse* all sit at the marked clinical level. Mean scores for the *Non-reciprocal* and *Dissociation/Trauma Symptoms* sub-scales then sit at the indicated clinical level, whereas the mean scores for the remaining sub-scales all sit at a subclinical level.

Table 14*BPD Cases (N=19) Mean ACA scale scores*

ACA Scale	Mean
ACA Total Score	68.8
Non-Reciprocal	7.7
Social Instability and Behavioural Dysregulation	23.1
Emotion Dysregulation/Distorted Social Cognition	15.3
Dissociation/Trauma Symptoms	3.9
Food Maintenance	5.3
Sexual Behaviours	2.5
Suicide Discourse	2.0
Negative Self-Image	7.4
Low Confidence	8.3

Figure 2: The BPD means plotted for each ACA sub-scale on the ACA Symptom Profile



The mean mental health scores of the BPD cases using CBCL syndrome scales are reported in Table 15. While individually, the scores will fall in different ranges, the averages of the scores show that the *Anxious/Depressed*, *Social Problems*, *Thought Problems*, *Rule Breaking Behaviours* and *Aggressive Behaviours* sub-scales all fall in the clinical range with *Anxious/Withdrawn* and *Attention Problems* scores falling in the borderline range for the boys. Whereas the average scores also show *Social Problems*, *Thought Problems*, *Attention Problems*, *Rule Breaking Behaviours* and *Aggressive Behaviours* all fall in the clinical range with *Anxious/Depressed* and *Withdrawn/Depressed* scores falling in the borderline range for the girls.

Table 15 also reports the mean mental health scores for the CBCL DSM-Oriented scales for the BPD cases. The average of the boys t-scores show *Anxiety Problems*, *Attention Deficit/Hyperactivity Problems* and *Conduct Problems* to be sitting at a Clinical level with *Affective Problems* and *Oppositional Defiant Problems* sitting at Borderline level. The average of the girls t-scores show *Attention Deficit/Hyperactivity Problems* and *Conduct Problems* to be sitting at Clinical level where as the *Affective Problems*, *Anxiety Problems*

and *Oppositional Defiant Problems* are at Borderline level. The CBCL DSM-Oriented scales present mean scores that fall in each of the Normal, Borderline and Clinical Ranges.

Table 15

BPD Cases (N=19) Mean Mental Health Scores (CBCL Syndrome Scales, CBCL DSM-Oriented Scales)

CBCL scale	BPD cases (N=19) mean scale score	Boys normative T-score equivalent (range)	Girls normative T-score equivalent (range)
I. Syndrome Scales			
Anxious-depressed	10.4	70 (clin.)	68 (bord.)
Withdrawn-depressed	5.8	65 (bord.)	66 (bord.)
Somatic Complaints	4.4	64 (norm.)	63 (norm.)
Social	11.2	76 (clin.)	75 (clin.)
Thought	9.7	74 (clin.)	74 (clin.)
Attention	13.0	69 (bord.)	76 (clin.)
Rule Breaking Behaviour	14.1	71 (clin.)	74 (clin.)
Aggression	23.5	81 (clin.)	80 (clin.)
II. Broadband Scales			
Internalizing	20.6	70 (clin.)	69 (clin.)
Externalising	37.6	76 (clin.)	76 (clin.)
III. DSM-Oriented Scales			
Affective problems	5.7	66 (bord.)	65 (bord.)
Anxiety Problems	5.4	71 (clin.)	68 (bord.)
Somatic Problems	2.8	64 (norm.)	62 (norm.)
Attention Deficit/Hyperactivity Problems	10.6	71 (clin.)	74 (clin.)
Oppositional Defiant Problems	6.6	69 (bord.)	69 (bord.)
Conduct Problems	14.6	73 (clin.)	75 (clin.)

clin. = clinical range

bord. = borderline clinical range

norm. = normal range

Overlap of BPD cases with empirically-derived ACA symptom profiles

As shown in table 16, every adolescent who fell in the ACA cluster 8 was shown to be a BPD case ($n=12$). Furthermore, 18 out of the 19 identified BPD cases are in clusters 6, 7 and 8 which are the top three severe and complex clusters. The remaining BPD case was in cluster 4.

Table 16*Overlap Between BPD cases and ACA Symptom Profiles*

Clusters	1	2	3	4	5	6	7	8	Total
N. of non-cases	17	21	13	14	9	14	6	0	94
N. of cases	0	0	0	1	0	4	2	12	19
Total	17	21	13	15	9	18	8	12	113

C-PTSD Case-Level Analysis*Defining C-PTSD cases*

Step 1: Defining PTSD Cases. PTSD cases based on C-PTSD criterions 1 and 3 were identified. A 3+ cut off score showed 12 adolescents met criterion 1, and 15 adolescents met criterion 3, however only 3 adolescents met both criterions. A 2+ cut off score then showed 5% (n=12) of the whole sample met criteria for PTSD.

Step 2: Identifying Adolescents who meet Case-ness for the ‘Complex’ criteria. A 4+ cut-off score was then used for the two subgroups of criterion 4 (emotional reactivity and absence of emotion/dissociation). The 4+ cut-off score highlighted 26% (n=61) of individuals with emotional reactivity (4a) symptoms, but only 3.9% (n=9) of individuals with dissociative symptoms (4b). The cut-off score for criterion 4b was then changed to 3+, resulting in a total of 69 adolescents that met either part a, part b, or both parts of criterion 4.

A 3+ cut-off for the other two DSO symptoms (criteria 5 and 6) showed 3 adolescents met all three DSO criteria. Changing to a 4+ cut-off revealed 13 adolescents met all 3 criterions, with 34 adolescents meeting 2 criteria, and 48 meeting one criterion.

The numbers and percentages of adolescents who met criteria for each of the DSO criteria are identified in Table 17, thus showing that affect regulation is more strongly represented in relation to the other 2 DSO criteria. Table 18 reports how many adolescents met criteria for the DSO symptoms collectively, showing only 1% ($n=13$) met criteria for all 3 of the DSO criterions.

Table 17

Number and Percentage of Adolescents who met Criteria for Criteria 4, 5 and 6 of C-PTSD

Criterion Met	N met criterion	% met criterion
(4) Severe and pervasive problems in affect regulation.	69	30%
(5) Persistent beliefs about oneself as diminished, defeated or worthless, accompanied by deep and pervasive feelings of shame, guilt or failure related to the traumatic event.	20	8.7%
(6) Persistent difficulties in sustaining relationships and in feeling close to others.	25	10.87%

Table 18

Number of Adolescents who met 1, 2 or 3 Criteria for Disturbances in Self-Organisation

Criteria Met	N. of individuals	% of individuals
Did not meet any criterions	135	64%
Met 1 criterion of DSO symptoms	48	23%
Met 2 criteria of DSO symptoms	34	11%
Met 3 criteria of DSO symptoms	13	1%
	230	100%

Step 3: Defining Complex PTSD Cases. The number of adolescents who met individual DSO criteria alongside meeting the simple PTSD criteria is reported in Table 19. The individuals who met criteria for simple PTSD were more likely to meet criterion 4 for affect regulation, where criterion 6 (interpersonal difficulties) was less likely to be met.

Table 19

Number of Adolescents who met PTSD Criteria in Conjunction with Each Individual DSO

Criterion

Criteria Met	N. of Individuals
PTSD and DSO 4 (affect regulation)	8
PTSD and DSO 5 (negative beliefs about oneself)	5
PTSD and DSO 6 (interpersonal difficulties)	4

Table 20 reports the distribution of number of C-PTSD diagnostic criteria met by participants. More than half of participants (57.8%) met nil diagnostic criteria. As outlined in the Methods chapter, C-PTSD cases are defined for the present analyses as participants who met each of the diagnostic criteria. As revealed in Table 20, 3 participants (0.43%) were defined as C-PTSD cases. Thus meaning there were 9 adolescents with simple PTSD that didn't meet criteria for full C-PTSD. Furthermore 10 adolescents met the DSO symptom criteria but did not meet simple PTSD criteria. Due to only 3 cases being identified, further analysis on gender and age was not completed.

Table 20

Number of C-PTSD criteria met

N. of Criteria met	N. of individuals	% of individuals
0	123	57.8%
1	40	18.7%
2	36	15.2%
3	19	4.7%
4	9	3%
5	3	0.43%
	230	100%

Overlap of C-PTSD cases with empirically-derived ACA symptom profiles

2 of the C-PTSD cases were shown to be in ACA cluster 8, along with the majority of the BPD cases. The other C-PTSD case was in cluster 6. Furthermore, the 2 C-PTSD cases that were shown to sit in cluster 8 also met criteria for BPD.

Chapter 5: Discussion

The purpose of the current study was to test the validity of two existing diagnostic constructs for formulating the complex trauma- and attachment-related symptomatology that are manifested by adolescents whom are residing in out-of-home care whom also had extensive pre-care exposure to maltreatment. This was completed by conducting new analyses of existing data. Data had been previously collected using ACA and CBCL measures. The first step required identifying selected items from the ACA and CBCL to derive new scales that reflected C-PTSD and BPD criteria. Following this, BPD and C-PTSD cases were defined. While both steps involved analysis of the ACA and CBCL item scores, the cases were defined without looking at the individual's scores on derived scales. Chapter 5 articulates and explains the main findings of the study and compares these findings to previous research. Further, this chapter also highlights limitations of the study, implications of findings and offers recommendations for future research.

Summary of Results

Symptom-Level Analysis

The BPD and C-PTSD scales derived from ACA and CBCL items showed moderate reliability and validity. Both the BPD and the C-PTSD scales showed high levels of internal consistency. The item “feels empty or without emotions” was a statistical outlier in both of the BPD and C-PTSD scales in regards to item-rest correlation, however the items in the C-PTSD scale generally had smaller correlations than in the BPD scale. The lower mean score for the BPD scale ($m=7.5$) suggests the vast majority of adolescents were not scoring highly on the scale. The mean score for the C-PTSD scale was also relatively low ($m=6.7$), suggesting adolescents were also scoring low on the C-PTSD scale.

Case-Level Analysis

More BPD cases were observed in this sample ($n=19$) than C-PTSD cases ($n=3$). BPD cases were shown to have similar gender and age distributions, whereas these analyses were not completed for the C-PTSD cases due to the very small number of cases that were identified. The small number of C-PTSD cases was due to very small numbers of adolescents meeting PTSD criteria ($n=12$), and DSO criteria ($n=10$), meaning by the time these results were combined, only 0.43% ($n=3$) of the sample was identified as having met C-PTSD case-ness.

Matching these results to already generated symptom profile clusters from Tarren-Sweeney (2020) shows that the vast majority of the BPD cases ($n=18$) are in the top 3 clusters for complexity and severity and further, all of the adolescents in Cluster 8 were BPD cases ($n = 12$). Of the 3 C-PTSD cases, 2 cases fit cluster 8 with majority of the BPD cases. Thus suggesting that cluster 8 captures the complexity and severity of symptoms that typically come with a BPD or C-PTSD diagnosis. Interestingly, 2 of the 3 C-PTSD cases were also BPD cases, thus highlighting an overlap between symptomatology for those who have C-PTSD, however results also indicate that those who have BPD typically don't have C-PTSD. The mean scores for BPD cases in each of the ACA, CBCL and DSM-oriented sub-scales revealed the vast range of symptoms this population experiences and the wide ranging severity of these symptoms. Further, because there was such a wide range of symptoms represented by each of the ACA, CBCL Syndrome and CBCL DSM-Oriented sub-scales, results showed that not all symptoms are accounted for under a BPD diagnosis, much less a C-PTSD diagnosis, thus suggesting that these diagnoses may not be able to cater to the entirety of a young person's complex trauma and attachment symptoms.

Explanation of Findings and Previous Research

Symptom Level Analysis

The vast majority of items selected for the BPD and C-PTSD scales were selected from the ACA measure, with the CBCL contributing only 3 items in the BPD scale and 2 in the C-PTSD scale, thus, suggesting that while neither psychometric test is created for use in identifying these diagnoses, the ACA is much more equipped to investigate this level of complexity and severity of symptoms than the CBCL.

Borderline Personality Disorder Scale. Items were able to be found for each of the criteria in the BPD scale, however only one item was able to be found for criterion 7 “chronic feelings of emptiness” due to there being very few items that had appropriate specificity. “Empty” has been proposed as a subtype of BPD in adults (Rebok et al., 2015), however the emptiness has been understood as lacking a stable sense of identity. Difficulty with identity is catered for in criterion 3 in the BPD criteria; “identity disturbance: markedly and persistently unstable self-image or sense of self” and items were selected for the BPD scale that cater for criterion 3, therefore, criterion 7 is still appropriately covered in the scale.

Criterion 9 was split into 2 parts in order to ensure that both types of symptoms that fall under criterion 9 were measured by the scale. Both *Paranoid Ideation* and *Severe Dissociative Symptoms* made up criterion 9 in its fullness, with items selected for each. Paranoid cognitions are often associated with psychosis however these cognitions are not always symptoms of psychosis in those with BPD. When psychotic symptoms do appear in BPD, they are usually within the context of extreme stress and the symptoms can be both triggered and intensified as a result of situational crises (D'Agostino, Rossi Monti, & Starcevic, 2019). Research from Kingdon et al. (2010) looked at both BPD and Schizophrenia patients and found the groups had similar experiences of voices, however their

experience of paranoia differed in frequency. While there is large overlap between psychotic symptoms and BPD symptoms (Kingdon et al., 2010), there is no consensus on when psychotic symptoms ‘outgrow’ the BPD criterion 9 and become their own comorbid psychotic disorder. Understanding the relationship between BPD and psychotic symptoms was important for identifying appropriate items to include in the derived scales, however this process also further highlighted the lack of clarity in diagnosing as similar symptoms belong to different constructs.

Complex Post-Traumatic Stress Disorder Scale. Item selection for C-PTSD proved difficult due to no item being appropriate for testing criterion 2 (avoidance), as there was no item on either the ACA or CBCL that was specific enough to guarantee it was related to the avoidance of trauma triggers. Previous research suggests that it is the avoidance symptoms within PTSD that are the most reliable indicator that full PTSD criteria might be met, and further, avoidance symptoms have been reported to be the most predictive of the level of severity associated with one’s PTSD diagnosis (Thompson & Waltz, 2010). However, adding another item to allow for criterion 2 to be represented in the scale may have actually lowered the likelihood of adolescents meeting criteria for simple PTSD, thus querying if the three identified C-PTSD cases would still meet case-ness, or if an additional required item would instead exclude them from meeting criteria. Therefore, defining PTSD cases on two as opposed to three criteria mean the study is more likely to over-estimate the number of true cases as opposed to under-estimate.

While a large amount of literature has addressed the role of trauma in the development of dissociative symptoms, the role of dissociation in the diagnosis of C-PTSD is not always recognised. Dissociation has been reported to be a key symptom that separates simple PTSD from C-PTSD (Hyland, Shevlin, Fyvie, Cloitre, & Karatzias, 2020), and

further, Wolf et al. (2012) highlights that dissociation is a highly noticeable and important part of posttraumatic psychopathology. However while C-PTSD criteria refers to affect regulation capacity, it does not explicitly address dissociative symptoms in the listed criteria. A thorough literature search found the original proposal document for C-PTSD which highlighted that dissociative symptoms fit under the criterion 4 that includes affect regulation (Maercker et al., 2013), thus allowing dissociative items to be included in the C-PTSD scale.

Criterion 6 of C-PTSD includes “persistent difficulties in sustaining relationships”, which is a very specific social relationship difficulty. This difficulty is not specific to C-PTSD as it is manifested by many previously maltreated young people who do not have PTSD, and by young people with neglect, but not abuse histories. This criterion has similarities with other disorders including Reactive Attachment Disorder (Bruce et al., 2019), a disorder of non-attachment, and further, this criterion also resembles the social component of Autism Spectrum Disorder (ASD) (American Psychiatric Association, 2013), thus providing clinicians and researchers alike with difficulty when it comes to identifying this specific criterion and diagnosing C-PTSD. Furthermore, criterion 6 also refers to people who don’t feel close to other people. What is not known, however, is whether or not these people wish for closer relationships, or whether they would prefer to be on their own. This lack of clarity in diagnostic criteria along with the overlap in symptoms between diagnoses could help to explain why young people with trauma symptoms are at times being misdiagnosed with ASD (Brenner et al., 2018).

The item “temper tantrums or hot temper” was selected from the CBCL for both the derived BPD and C-PTSD scales, and was one of the very few CBCL items selected for use in this study. Typically, tantrums in adolescence are associated with ASD and these tantrums are not always outgrown (Gourash, 2017). However recent research has linked severe tantrums and aggressive outbursts to attachment difficulties (Vasquez & Miller, 2018),

difficulties of which are highly prevalent in samples of maltreated adolescents. The high prevalence of temper tantrums (49%) in the current study's sample could instead be explained by Regulation Theory (Schore & Schore, 2008) which posits that caregivers are largely responsible for assisting the child to develop appropriate regulatory capacity. Therefore, persistent exposure to neglect or trauma can result in the necessary cognitive patterns for regulation being diverted, thus leaving the young person without the ability to regulate their emotions, leading to tantrums (Vasquez & Miller, 2018).

While the item-rest correlations between items on both of the BPD and C-PTSD scales were adequate, the item "feels empty or without emotion" stood out on both the BPD and C-PTSD scales as a lower correlating item in comparison with the rest of the scale. This could be explained by the item's prevalence of 2%, making it the item with the lowest prevalence. Further, it is possible that the low prevalence was due to this symptom not being measured well from caregiver report. While the measure relies on carer-report data, this item relies on the carer being informed by the young person that they do in fact feel empty or without emotion. However, the limitation with this is that "feeling empty" is potentially an unlikely phrase for a young person to not only confide to their caregiver, but it is also possible that the young person won't even be able to identify it within themselves, or be able to articulate it, thus making it difficult to measure it from a caregiver's report. However, this item was kept in the scale due to it being a satisfactory item to represent BPD criterion 7 ("feeling empty"), and C-PTSD criterion 4 (affect regulation-absence of emotion).

Developmental Trauma Disorder. The process of selecting items to match the diagnostic constructs highlighted deep imperfections in the DTD construct itself, imperfections which have been observed in previous literature. Developmental Trauma Disorder was unable to be statistically assessed in this study due to the vagueness of the

construct creating difficulty to select items for a scale. The vagueness of DTD has been discussed in previous studies with Schmid et al. (2013) suggesting this is a large part of the reason why it was not included in the DSM-5. However, the wide range of impairment that DTD does account for (including relational, affective, somatic, behavioural, cognitive and self-attribution difficulties) is indicative of a person who has experienced trauma, resulting in multiple domains of functioning being severely impacted. What van der Kolk (2005) aims to provide through DTD is a diagnosis that understands each of these domains of functioning can be impacted by maltreatment, and that even seemingly irrelevant symptoms (e.g. twitching or stomach aches) can still be linked back to trauma. However, the end result is a disorder that encompasses many disorders within it (Schmid et al., 2013), displacing already existing constructs and adding to diagnostic confusion for clinicians.

Correlations between BPD and C-PTSD Scales and the ACA Sub-Scales. Not all ACA sub-scales were represented in the BPD scale, this included; *Non-Reciprocal, Food Maintenance, Sexual Behaviours, Negative Self-Image* and *Low Confidence*, thus suggesting a lack of cross over between these symptoms and BPD criteria. *Negative Self-Image* and *Low Confidence* were shown to have a small correlation with BPD, which contrasts previous research that has shown those with BPD have low self-esteem difficulties that fall into clinical ranges (Lynum, Wilberg, & Karterud, 2008; Winter et al., 2018). Interestingly, the *Suicide Discourse* sub-scale also showed a small correlation with BPD, again contrasting previous research. BPD has long been associated with a high suicide rate (Kaess, Brunner, & Chanen, 2014), and further, BPD accounts for many hospital visits and admissions due to their nature of non-suicidal self-injury and suicide attempts (Kaplan et al., 2016). This small correlation could be explained by the 3% prevalence of suicide attempts in the current study's population. The low prevalence could be explained by the fact that the vast majority of the

adolescents didn't score on the suicide scale at all (most of them scored zero). However, this is also surprising as suicidal ideation and attempts have also been linked to maltreatment in childhood in numerous studies (Barbosa et al., 2014; Saraçlı et al., 2016), and further, suicide rates among young people in out-of-home care have been reported to be among the highest rates in the USA (Brown, 2020). Therefore this population would have been thought to be more vulnerable to suicidal ideation and attempts. Previous research has suggested that two thirds of caregivers of young people who were experiencing suicidal ideation were not aware of the young person's suicidality (Taussig, Harpin, & Maguire, 2014), thus raising doubt as to the accuracy of carer-report data on the suicide sub-scale.

Interestingly, the ACA sub-scales had generally smaller correlations with the C-PTSD scale than the BPD scale. As C-PTSD is a complex trauma diagnosis and the ACA was designed to measure complex trauma and attachment symptoms (Tarren-Sweeney, 2013a), it was thought that this correlation would be larger. This discrepancy could be understood as a lack of appropriateness for the C-PTSD construct in this population, or this discrepancy could suggest that the BPD diagnosis actually caters for a wider range of symptoms than the C-PTSD construct, and therefore is more equipped to explain these types of complex symptoms. *Emotional Dysregulation/Distorted Social Cognition* was the largest correlating of the ACA sub-scales, followed by *Negative Self-Image, Dissociation/Trauma Symptoms*, and *Social Instability/ Behavioural Dysregulation*, however this is to be expected as these sub-scales match with the DSO criteria in C-PTSD. As with the BPD scale, *Suicide Discourse* had a small correlation with the C-PTSD scale, thus again contrasting previous research which has demonstrated clear links between trauma histories and suicidal ideation and attempts, particularly in those with C-PTSD (Pinheiro et al., 2016).

Case-Level Analysis

BPD. Population studies looking at BPD have estimated a 5.9% prevalence in the general population (Jopling, Khalid-Khan, Chandrakumar, & Segal, 2018). Research investigating BPD in younger community samples has shown lower prevalence's of the disorder with a 3.2% prevalence observed in 11-12 year olds (Zanarini et al., 2011). Comparing this to the current study's prevalence rate of 8.2%, current findings suggest that adolescents whom are residing in out-of-home care are more vulnerable to developing symptoms in line with BPD criteria. Furthermore, findings also show that the BPD diagnosis is a valid diagnosis for a small amount of cases in the current sample, however the majority of adolescents who are residing in out-of-home care present with a different set of symptoms that do not lead to a BPD diagnosis. The lack of BPD cases could be explained by the fact that the symptoms shown by these adolescents are not able to be adequately captured by a singular diagnostic construct like BPD. Interestingly, even in a high-risk sample, no adolescent met all 9 criteria for BPD.

BPD in adolescence has been repeatedly linked to maltreatment in previous research (Atlas, 1995; Belsky et al., 2012; Infurna et al., 2016; Venta et al., 2012). The current study's sample had all been exposed to maltreatment, however only 8.2% met criteria for BPD, thus findings suggest that maltreatment does not always result in symptoms of BPD. This is supported by findings from Belsky et al. (2012) who only found a small correlation of 0.2 between physical maltreatment and BPD scores in a population study.

Current findings show a statistically insignificant difference between boys and girls who met criteria for BPD, a finding that contrasts the DSM-5 which stipulates 75% of BPD cases are females (American Psychiatric Association, 2013). The diagnosis that is given to an individual can often be a result of a clinician's gender bias, which may explain why more males end up with an Antisocial Personality Disorder (American Psychiatric Association,

2013; Garb, 1997) and females are more likely to be given a BPD diagnosis (Woodward, Taft, Gordon, & Meis, 2009). However, if females were more likely to meet diagnostic criteria for BPD than males, then findings from the current study would be expected to reflect this. Consequences of this gender bias also fall over into treatment planning and intervention, as clinicians have been reported to be less optimistic about a client's recovery if they have BPD than if they have a trauma diagnosis (Lam, Salkovskis, & Hogg, 2016). These findings suggest that gender does not make a difference in an adolescent meeting criteria for BPD.

The mean age for the BPD cases was the same as the non-BPD cases (15.3 years), thus suggesting that the scores were not linked to maturation. A mean age of 15 suggests that symptoms are in place before late adolescence or early adulthood, a finding which compliments previous research that BPD could be observed in adolescence (Glenn & Klonsky, 2013; Marton et al., 1989). However, these results also need to be understood in light of research that suggests an adolescent's symptom profile of BPD can change over time, as both their symptoms and the associated severity changes whether it be by time, maturation or application of intervention (Bernstein et al., 1993; Mattanah et al., 1995).

One of the aims in prolonging issuing a BPD diagnosis is to observe for the stability of the construct, as is required by the DSM-5 (American Psychiatric Association, 2013). However, the disadvantage of this is that often the result of prolonging diagnosis, is prolonging treatment. The DSM no longer requires a specific age before a BPD diagnosis can be given (American Psychiatric Association, 2013), therefore the current study's results add more support in favour of diagnosing BPD earlier in a person's symptom trajectory once stability has been established.

C-PTSD

PTSD: Work from Salazar et al. (2013) highlights that 18.8% of their foster care sample meets criteria for simple PTSD, whereas 31.6% of foster youth met PTSD criteria in a study from Haselgruber et al. (2020). Both of these studies show higher rates of PTSD in an out-of-home care sample than the 5% of the current study's sample, even though the current study's sample is a high risk, predominantly traumatised sample. This finding supports the assertion from van der Kolk and Courtois (2005) that despite significant trauma histories, many of these young people do not meet criteria for PTSD. While van der Kolk and Courtois (2005) suggest this is because some forms of trauma (e.g. loss and neglect) aren't accounted for under a PTSD traumatic event criterion, the C-PTSD criteria for the PTSD symptoms does not stipulate the specificity of trauma experienced. Therefore, the current study's results suggest there may be something else going on to explain why adolescents who have experienced child maltreatment do not meet criteria for PTSD. Scheeringa, Wright, Hunt, and Zeanah (2006) highlight that parent and caregiver under-reporting of PTSD symptoms can be an issue for identifying PTSD in adolescence. Higher prevalence's of PTSD were found in studies from Salazar et al. (2013) and Haselgruber et al. (2020) which could be a result of their use of self-report measures that provided more accurate reflections of what the adolescents were experiencing. Another explanation for the current studies low PTSD scores, is that the structure of symptoms among adolescents differs from that of adults and perhaps a more developmental understanding of C-PTSD is required that addresses how the simple PTSD symptoms might react differently with the DSO symptoms in an adolescent developmental period (Kazlauskas et al., 2020). van der Kolk and his team suggests that DTD is the version of C-PTSD that understands trauma symptoms from a developmental lens (van Der Kolk et al., 2019) however as discussed, the current study concludes that the DTD diagnosis is not appropriate for use in its current form.

C-PTSD: While 3 adolescents met C-PTSD case-ness, the results also show that very few adolescents were close to meeting full C-PTSD criteria, thus suggesting that the C-PTSD diagnosis is not supported by the current study as a valid and reliable construct for adolescents with significant trauma histories. This is the first known study to not provide evidence in favour of the construct of C-PTSD in adolescence, however very few studies have been generated that investigate C-PTSD in this age group at all. One other study that looked at adolescents residing in foster care found that 22.8% of their sample met criteria for C-PTSD (Haselgruber et al., 2020) which is a stark contrast to the current study's 0.43%. The low PTSD scores are not to blame on their own for the low amount of C-PTSD cases, as even without the simple PTSD criteria, only 1% ($n=13$) adolescents met criteria for the DSO symptoms. Thus suggesting that the DSO symptoms are also ill equipped to cater for the wide range of functional impairment experienced by this population. One explanation for this could be the diversity of symptoms that is experienced by these adolescents, and while the symptoms are wide ranging and severe, these adolescents are not meeting enough of the specific items required to meet diagnosis, an issue that has been reported on in previous literature (Dejong, 2010). Therefore, while the C-PTSD diagnosis provides further understanding of the complexity of trauma symptoms, it still remains ill-equipped to meet the vast range of symptoms experienced by this population.

Findings from the current study suggest that despite some overlap, C-PTSD and BPD are not constructs that are able to be interchanged in adolescence as some suggest they could be in adults (Kulkarni, 2017). While 2 of the 3 C-PTSD cases met BPD criteria, if the constructs were interchangeable there would be many more C-PTSD cases generated to match numbers of the BPD cases and as a result there would be more overlap between the diagnoses. Work from Maercker et al. (2013) highlights the differences between BPD and C-PTSD including; the risk for self-harm, the treatment required for recovery and the

constellation of symptoms. Results from an adult population offered specific symptoms that differentiate between the two constructs, highlighting symptoms that are observed in BPD but not C-PTSD including; “frantic efforts to avoid abandonment, unstable sense of self, unstable and intense interpersonal relationships, and impulsiveness” (Cloitre et al., 2014), findings of which were supported in a study from van Dijke et al. (2018).

BPD falls under the personality disorders umbrella, however it was able to capture the symptoms of more adolescents than C-PTSD was able to, though even BPD could only capture the symptoms of 19 adolescents. With C-PTSD catering for 3 adolescents, but with 2 of them also being included as BPD cases, 210 adolescents do not fit criteria for either diagnosis despite showing a wide array of challenging symptoms and experiencing a large amount of impairment across many different domains of functioning. Thus, suggesting that perhaps trying to fit this level of severity and complexity into one of the investigated diagnostic constructs is not in the adolescent’s best interests.

Symptom Profiles. Symptom profiles allow another way for an individuals’ symptoms to be understood, a way that is not limited to the scope of singular diagnostic constructs. Previous work by Tarren-Sweeney (2013a) has suggested symptom profiles to be a different way of explaining the complex symptoms shown by young people residing in out-of-home care. Symptom profiles allow symptoms to be grouped together in a different way from what is recognised by formal DSM and ICD diagnoses. The current study’s mean scores on the ACA Sub-Scales, CBCL Syndrome Scales and CBCL DSM-Oriented Scales highlight the vast range of symptoms experienced by the BPD group that are also characterised by a varying amount of severity. The fact that 18 of the BPD cases fit into the top three severe and complex symptom profiles for the ACA indicated that BPD is indeed rife with complexity and varying severity. Furthermore, every ACA sub-scale is represented on the symptom

profile whereas not every sub-scale was represented in the items selected for the BPD scale, thus suggesting that there are many symptoms that these individuals show that are not able to be accounted for by the BPD diagnosis. Therefore, findings conclude that a single diagnosis of BPD is not the most appropriate diagnosis to allocate on its own to an adolescent displaying this wide range of symptoms. The results from the DSM-Oriented Scales highlight that there is a large overlap between BPD and other diagnoses, thus, BPD is limited in its ability to explain the fullness of the complex trauma and attachment symptoms shown by this population.

Different Conceptualisations of Complex Trauma and Attachment Symptomatology

When clinicians are working to make diagnoses “fit”, it is highly possible that other symptoms or presenting difficulties are intentionally being left out in order to package a person’s symptoms up into a singular diagnosis. However, it is also possible that even if many criteria of a range of diagnoses are met, often a diagnosis is still not given to a young person due to them not meeting the full criteria of any one diagnosis (Dejong, 2010). Different ways of conceptualising presenting symptoms may offer a different way of understanding the symptoms that allow for each symptom to be identified and subsequently explored in relation to its own severity and history, and more recent models of diagnosing mental health problems allow room for this to be appropriately explored. As highlighted in Chapter 1, comorbid diagnoses could be a solution due to the evidence from the current study’s CBCL DSM-Oriented profiles suggesting that these young people may meet criteria for a range of diagnoses that are all simultaneously occurring. However, as Cook et al. (2005) highlights, the limitations of this may mean the focus is only on the symptoms and the diagnostic labels and therefore, the important role of maltreatment exposure could be overlooked in treatment planning.

Transdiagnostic models allow the exploration of processes that play a causal role in multiple diagnoses, thus allowing root causes of these complex trauma and attachment symptoms to be explored (Nolen-Hoeksema & Watkins, 2011). A transdiagnostic approach would allow clinicians to explore the maltreatment that has resulted in a range of symptoms and severity, regardless of if the symptoms fit into a singular diagnosis. The benefits of this come in the formulation and treatment planning, as the intervention can be directed at what has happened to the individual, not what diagnosis the individual ‘has’. Symptom profiles are another way of conceptualising the complexity of symptoms that is happening for this population. Research from Tarren-Sweeney (2013c) has suggested symptom profiles to be a valid way of conceptualising mental health difficulties in children and more recently in adolescence (Tarren-Sweeney, 2020). Existing diagnoses in the DSM and ICD currently group together certain symptoms that have been shown to appear together and give the groups of symptoms a diagnostic label. However, symptom profiles allow for a different variation of symptoms to be grouped together in ways that are not currently recognised by existing diagnostic classifications. Thus, the symptom clusters do not assume a definitive way of symptoms fitting together, therefore creating a more accurate representation of what symptoms an individual might be experiencing.

Limitations of the Present Study

The findings of this study should be interpreted in light of several limitations. Firstly, the data that were used for this study were collected from caregiver reports, thus allowing for human error in the caregivers reporting of what is happening for the young person. Both the ACA and CBCL measures rely on adolescents disclosing information regarding their internal thoughts to their caregivers, however if this information is not disclosed, the caregiver has to give their best effort based on their own observations and knowledge. Therefore, it is possible

that caregivers systematically under-report adolescent trauma symptoms, as has been suggested in previous literature (Scheeringa et al., 2006). Research has indicated that caregivers are not necessarily aware of the young person's suicidality (Taussig et al., 2014), therefore it is possible that there are other sub-scales that caregivers are not providing accurate information for. Thus, the scores and therefore the final BPD and C-PTSD case numbers may be different if compared to self-report data. In addition, other studies that investigate these constructs are based on empirically backed psychiatric interviews with the young people themselves, meaning that there is possibility of not only a lack of reliability in the current study's results due to caregiver reporting error, but also a lack of reliability in the comparison of this study's findings to other studies who have used different self-report measures.

Both the ACA and CBCL did not have any items that measure the criterion 2 in C-PTSD, "avoidance of thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events". This had implications both for identifying C-PTSD cases, and for constructing a valid continuous scale of C-PTSD symptoms. The lack of literature available on C-PTSD in adolescence made understanding the nature of the C-PTSD symptoms difficult. With only three studies being previously completed and only one of these looking at an out-of-home care sample, there was little work available to understand the C-PTSD symptoms in light of a developmental framework. Therefore, research from within the adult population was drawn upon to understand the symptoms and the differences between BPD and C-PTSD. However it is also possible that these differences could differ between the adult population and the adolescent developmental phase (Kazlauskas et al., 2020)

Finally, there are limitations in the generalisability of the results. While other studies have found higher prevalence's of C-PTSD in adolescence, the current study's findings

suggest a very low prevalence of C-PTSD. This could be a result of the specificity of the sample being an adolescent sample of whom all are residing in out-of-home care. This may mean that results are not generalisable to the general population of adolescents. Further, because data regarding ethnicity were not gathered in the original data collection, there are also limitations in the generalisability of this study's findings to other cultures and ethnicities. Despite these limitations, this research still adds to current understandings about the most appropriate diagnoses to capture complex trauma and attachment symptomatology in adolescence.

Recommendations for Future Research

Findings from the current study enrich the current literature's understanding of the relationship between C-PTSD, BPD and maltreatment experiences as this is the first study known to the author to apply these diagnoses collectively to a population of adolescents residing in out-of-home care. Furthermore, this is one of few studies internationally to explore the C-PTSD construct in a sample of adolescents. As has been discussed in Chapter 2, research comparing these constructs in this population is scant and further research in this area is needed in order for adolescents to receive accurate diagnoses, fully informed formulation and effective intervention. Specifically, replicated studies that use empirically supported BPD, C-PTSD and DTD measures for data collection and use caregiver- and self-report data collection methods, could decrease the limitations raised in the current study. Thus, providing more understanding in relation to how these diagnoses fit together and the most appropriate diagnostic option for adolescents displaying these complex trauma and attachment symptoms.

An exploration of why so many adolescents with trauma histories do not meet criteria for trauma diagnoses would also prove to be useful to clinical practice. Even when the type of

trauma experienced is not required knowledge for diagnosis as within the current study, many did not meet criteria for PTSD and further, many did not meet additional DSO symptoms. Therefore, further investigation of C-PTSD and it's appropriateness for explaining the complex trauma and attachment symptoms that can be found in an adolescent population would prove beneficial. Further, investigating how C-PTSD fits with a developmental psychopathology model and if the disruption in brain development and attachment systems early on in development would change how the symptoms interact with one another (Kazlauskas et al., 2020) would also prove helpful information for both researchers and clinicians. While a developmental approach to diagnosing trauma has been proposed in DTD (van der Kolk, 2005), Chapter 3 discusses the limitations within DTD that impeded it's acceptance into the DSM.

The discrepancy between the number of BPD and C-PTSD cases has provided preliminary results to suggest there are differences in BPD and C-PTSD. While there is an understanding of the differences between BPD and C-PTSD symptomatology in the adult population (Cloitre et al., 2014; van Dijke et al., 2018), clinicians in the field would benefit from similar studies being completed that investigate the difference between the two diagnoses in adolescence. If research is able to accurately identify the differences in adolescence it could have large implications for the accurate assessment and intervention of these difficulties for this population.

Future research could also benefit from further exploring symptom profiles as a way of explaining an adolescent's symptom presentation, following which, research could begin exploring how to align treatment interventions to symptom profiles, as opposed to the current approach which applies treatment designed for a specific diagnosis.

Implications of the Present Study

Implications of this study suggest that C-PTSD is too limited as a construct to be a diagnosis available for consideration in adolescents residing in out-of-home care. Further, BPD is observable in adolescence, and therefore clinicians should give consideration to the diagnosis in this age group and with those who have experienced child maltreatment, while also giving consideration to the benefits and costs of applying this diagnosis. As discussed in Chapter 1, BPD is a diagnosis that comes with a large amount of stigma, and due thought should be given as to the help and harm done by issuing this diagnosis.

Due to the majority of C-PTSD cases meeting BPD case-ness, but majority of BPD cases not meeting C-PTSD case-ness, findings highlight there are differences in symptom presentation between the two diagnoses. While there is not yet a consensus on what these differences are in adolescence, clinicians need to be aware of the fact that there are differences when diagnosing in order to make accurate diagnostic decisions and to formulate appropriate treatment plans.

The results of the current study raise further questions about the way in which clinicians apply diagnoses, and the relevance of these diagnoses to their population. While the current study's population has been found to fit predominantly BPD criteria, the results more importantly show the remainder of symptoms that are not accounted for by these diagnoses, highlighting the importance of not trying to squeeze symptoms into a singular diagnostic construct. Keeping an open mind to other symptoms and diagnoses can allow for clearer formulation, thus more effective outcomes. Further, these findings advocate for the implementation of a transdiagnostic model when working alongside this population, thus allowing both root cause of difficulties and presenting problems to be addressed in treatment.

Finally, the complexity of symptoms evidenced by this population can make them difficult to work with at times. The attitude which clinicians hold towards their patient is

important, as is the way in which the symptoms associated with disorders like BPD and C-PTSD are viewed. It is important that instead of viewing these symptoms as deficits inside the individual, viewing them as less affective adaptation strategies would change how the practitioner views the client and applies psychotherapy (Sack, 2004), thus leading to more effective outcomes.

Conclusion

Experiencing maltreatment in the early developmental years has been shown to impact brain development and a person's ability to form healthy and appropriate attachment relationships. Due to this, adolescents residing in out-of-home care are known to present with vast difficulties impairing many domains of functioning including affect, regulatory capacity, mentalising skills, interpersonal skills, changes in their attention and consciousness capacity and changes in one's view of themselves and the world. These are matched with a vast array of presenting symptoms and there has been consistent debate both in research and clinical practice about the best way to conceptualise these complex trauma and attachment symptomatic expressions. This study set out to explore what diagnosis, if any, is the most appropriate for catering to these complex symptoms. Findings showed that the BPD diagnosis was able to cater for more of the adolescents in the sample than the trauma diagnoses, however only 8.2% of the sample met BPD case-ness, suggesting that no diagnosis is fully equipped to cater for the complexity of symptoms that this group presents with.

The field currently sits with an absence of appropriate diagnostic and assessment tools to support this population of highly complex young people, therefore, Denton, Frogley, Jackson, John, and Querstret (2017) suggest that "formulation remains an important alternative to diagnosis". Starting with formulation (as opposed to diagnostic constructs) would allow for the use of other models (e.g. symptom profiles or the transdiagnostic model),

thus allowing clinicians and researchers to investigate the underlying processes that may help to explain and subsequently treat multiple disorders. Researchers and clinicians are encouraged to explore other ways of conceptualising complex trauma and attachment symptoms that allow for accurate diagnosis and encapsulates the full extent of the adolescent's difficulties.

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Appendix 1

Creation of the Scales: Accepting and Rejecting Items for the BPD, C-PTSD and DTD Scales				
(1) frantic efforts to avoid real or imagined abandonment.	5. Clingy 22. Fears you (or other adults) will reject him/her 33. Is convinced that friends will reject him/her 40. Possessive, can't share friends 81. Extreme reaction to losing a friend, or being excluded	5. <i>rejected</i> : clingy could also be related to relationship insecurity 22. <i>accepted</i> : fears regarding rejection aligns well with avoiding abandonment 33. <i>accepted</i> : expectation of abandonment can lead to efforts to avoid it 40. <i>accepted</i> : they may perceive their friend's friendship with someone else represents betrayal and abandonment 81. <i>accepted</i> : reaction due to experiencing perceived abandonment	11. Clings to adults or too dependent	11. <i>rejected</i> : clingy could also be related to relationship insecurity
(2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation	38. Manipulates or 'uses' friends 4. Changes friends quickly 40. Possessive, can't share friends [also criterion #1] 65. Turns friends against each other 81. Extreme reaction to losing a friend, or being excluded by other young people [also criteria #1 and #6]	38. <i>rejected</i> : item is not specific enough; there are numerous motivations for manipulating 4. <i>accepted</i> : item indicates the instability of relationship 40. <i>accepted</i> : item speaks to intense relationship 65. <i>accepted</i> : item speaks to instability and intensity of relationship 81. <i>accepted</i> : item speaks to the idealization of relationship		
(3) identity disturbance: markedly and persistently unstable self-image or sense of self	51. Seems insecure 29. Has a low opinion of him/herself 37. Low self-esteem DCI 23. Seems like a completely different person (dramatic change in personality) DCI 24. Thinks he/she is someone or something else	51. <i>rejected</i> : item does not accurately reflecting the instability that the criterion is addressing. 29. <i>rejected</i> : item does not accurately reflecting the instability that the criterion is addressing. 37. <i>rejected</i> : item does not accurately reflecting the instability that the criterion is addressing. DCI 23. <i>accepted</i> : item is an extreme manifestation of personality disturbance and is also a dissociative experience DCI 24. <i>accepted</i> : item is an extreme manifestation of personality disturbance and is also a dissociative experience	35. Feels worthless or inferior 71. Self-conscious or easily embarrassed	35. <i>rejected</i> : item does not accurately reflecting the instability that the criterion is addressing 71. <i>rejected</i> : item does not accurately reflect the instability that the criterion is addressing
(4) impulsivity in at least two areas that are potentially self-damaging	32. Impulsive (acts rashly, without thinking) 47. Risks physical safety, fearless 8. Constantly seeking excitement or 'thrills'	32. <i>accepted</i> : item appropriately reflects the criterion 47. <i>accepted</i> : item speaks to 'self-damaging' 8. <i>accepted</i> : seeking excitement can be part of the impulsivity	41. Impulsive or acts without thinking	41. <i>rejected</i> : item is similar to ACA item 32, both are not required
(5) recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour	72. Attempts suicide 75. Causes injury to him/herself 76. Describes how he/she would kill him/herself 87. Hits head, head-banging 91. Intentionally harms him/herself with knife or sharp implement 100. Threatens to injure him/herself	72. <i>accepted</i> : item appropriately reflects the criterion 75. <i>accepted</i> : item appropriately reflects the criterion 76. <i>accepted</i> : item reflects talking about the criterion	18. Deliberately harms self or attempts suicide 91. Talks about killing self	18. <i>rejected</i> : item is similar to ACA items 72 and 75, not all are required 91. <i>accepted</i> : item appropriately reflects the criterion

	101. Threatens to kill him/herself	87. <i>accepted</i> : head banging is a relatively common type of self-harm by emotionally disturbed children, and some adolescents, typically with a developmental trauma history. 91. <i>accepted</i> : cutting is the most common form of self-injury in adolescents 100. <i>accepted</i> : item appropriately reflects the criterion 101. <i>accepted</i> : item appropriately reflects the criterion		
(6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days)	59. Too dramatic (false emotions) 80. Extreme reaction to minor event (or for no obvious reason) 81. Extreme reaction to losing a friend, or being excluded by other young people [also criteria #1 and #2] 90. Intense reaction to criticism 98. Sudden or extreme mood changes	59. <i>rejected</i> : item lacks specificity, ‘too dramatic’ is a subjective opinion. 80. <i>accepted</i> : extreme reactions are commonly observed as part of affective instability in a BPD population 81. <i>accepted</i> : ‘extreme reaction’ speaks to instability in affect 90. <i>accepted</i> : ‘intense reaction’ also speaks to instability in affect 98. <i>accepted</i> : while mood changes could be associated with other disorders (eg. bipolar), the instability of mood over hours or days as mentioned in the criterion allows for this item to be included.	86. Stubborn, sullen or irritable 87. Sudden changes in mood or feelings 103. Unhappy, sad or depressed	86. <i>rejected</i> : the item does not describe any instability. Also a lack of specificity; there could be other reasons for an individual to be stubborn, sullen or irritable. 87. <i>rejected</i> : due to item 98 of the ACA being accepted (both are not required) 103. <i>rejected</i> : the item does not describe any instability. Also a lack of specificity; there could be other reasons for an individual to be unhappy
(7) chronic feelings of emptiness	94. Says he/she feels ‘empty’ or without emotions	94. <i>accepted</i> : this item appropriately reflects the criterion		
(8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights)	52. Shows intense and inappropriate anger 67. Upsets most people (without good reason) 105. Uncontrollable rage	53. <i>accepted</i> : this item appropriately reflects the criterion 67. <i>rejected</i> : item lacks specificity; a young person can upset others without it necessarily being an angry outburst 105. <i>accepted</i> : this item appropriately reflects the criterion	37. Gets in many fights 57. Physically attacks people 68. Screams a lot 95. Temper tantrums or hot temper	37. <i>rejected</i> : lacks specificity; the motivation and cause of the fight is unknown 57. <i>rejected</i> : lacks specificity; the motivation and cause of physically attacking another is unknown 68. <i>rejected</i> : lacks specificity; there may be numerous reasons a person screams a lot 95. <i>accepted</i> : temper tantrums would be developmentally appropriate in a much younger population, due to this adolescent population, it appropriately fits the criterion
(9) transient, stress-related paranoid ideation or severe dissociative symptoms	<i>A: Paranoid ideation:</i> 53. Startles easily (‘jumpy’) 55. Suspicious 48. Says friends are against him/her 68. Wary or vigilant (over-alert to danger) <i>B: Severe dissociative symptoms</i> 71. Appears dazed, ‘spaced out’ (like in a trance) 74. Can’t tell if an experience is real or a dream 82. Feels like things, people or events aren’t real 86. Has periods of amnesia (e.g. has no memory of what has happened in the last	53. <i>rejected</i> : Not specific to BPD. Adolescents in care have experienced severe maltreatment, and they often have good reason to be easily startled. There are many children with trauma-related anxiety including PTSD who startle easily. 55. <i>rejected</i> : item not sufficiently specific to BPD. Young people can be suspicious and socially withdrawn without having other signs of BPD. 48. <i>accepted</i> : item speaks to the stress related paranoia coming though in relationships 68. <i>rejected</i> : item lacks specificity in regards to its transient nature, furthermore this item can refer trauma-related anxiety rather than paranoia.	89. Suspicious 80. Stares blankly	89. <i>rejected</i> : due to item 55 of the ACA being accepted (both are not required) 80. <i>rejected</i> : item lacks specificity, there are numerous reasons a person could stare blankly (e.g. confused, tired)

		71. <i>accepted</i> : item lacks specificity in regards to its transient nature, however item fits as a dissociative symptom as listed in criterion 74. <i>accepted</i> : item measures dissociation as listed in criterion 82. <i>accepted</i> : item measures dissociation as listed in criterion 86. <i>accepted</i> : item measures dissociation as listed in criterion		
1) Re-experiencing the traumatic event or events in the present in the form of vivid intrusive memories, flashbacks or nightmares. These are typically accompanied by strong or overwhelming emotions, particularly fear or horror, and strong physical sensations.	39. Nightmares about specific events or people 73. Can't get scary thoughts or images out of his/her head (not due to watching a scary movie) 77. Distressed or troubled by traumatic memories	39. <i>accepted</i> : item speaks to the nightmares included in criterion 73. <i>accepted</i> : item speaks to the thoughts that accompany the trauma with the associated feeling of fear 77. <i>accepted</i> : item clearly represents the criterion	47. Nightmares	47. <i>rejected</i> : lacks specificity; nightmares are not unique to only children who have experienced trauma
2) Avoidance of thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events.	DCI 19. Lives in a fantasy world DCI 27. Very forgetful	DCI 19. <i>rejected</i> : does not adequately speak to the essence of the criterion DCI 27. <i>rejected</i> : does not adequately speak to the essence of the criterion		
3) Persistent perceptions of heightened current threat, for example as indicated by hypervigilance or an enhanced startle reaction to stimuli such as unexpected noises.	34. Is fearful of being harmed 53. Startles easily ('jumpy') 55. Suspicious 68. Wary or vigilant (over-alert to danger) DCI 14: Fears he/she might be molested	34. <i>accepted</i> : item speaks to fear of potential threat included in criterion 53. <i>accepted</i> : item is an indicator of hypervigilance 55. <i>rejected</i> : 'suspiciousness' in its nature is not close enough to 'hypervigilance' to warrant it's inclusion. 68. <i>accepted</i> : the item can be another way of saying hypervigilance DCI 14. <i>accepted</i> : speaks to the fear of potential threat	89. Suspicious	55. <i>rejected</i> : 'suspiciousness' in its nature is not close enough to 'hypervigilance' to warrant it's inclusion.
4) Severe and pervasive problems in affect regulation.	<u>A. Emotional Reactivity</u> 52. Shows intense and inappropriate anger 59. Too dramatic (false emotions) 72. Attempts suicide 75. Causes injury to him/herself 80. Extreme emotional reaction to minor event (or for no obvious reason) 91. Intentionally harms him/herself with knife/implement 98. Sudden or extreme mood changes 105. Uncontrollable rage CBCL 95. Temper tantrums or hot temper <u>B. Absence of emotion / dissociation</u> 71. Appears dazed, 'spaced out' (like in a trance) 74. Can't tell if an experience is real or a dream 78. Does not show pain if physically hurt 82. Feels like things, people or events aren't real 94. Says he feels 'empty' or without emotions	52. <i>accepted</i> : anger can be an affect problem 59. <i>rejected</i> : item lacks specificity, 'too dramatic' is a subjective opinion, also item does not also suggest a difficulty with affect regulation 72. <i>rejected</i> : children can be suicidal due to despair or depression. Item is not specific to dysregulation. 75. <i>accepted</i> : self-injury can be a manifestation of dysregulated affect 80. <i>accepted</i> : 'extreme reaction' can show dysregulated affect 91. <i>accepted</i> : self-injury is more specifically a manifestation of dysregulated affect. 98. <i>accepted</i> : the instability of mood suggests regulation difficulties 105. <i>accepted</i> : 'uncontrollable' suggest difficulty with regulation ability	87. Sudden changes in mood or feelings 103. Unhappy, sad or depressed 18. Deliberately harms self or attempts suicide 86. Stubborn, sullen or irritable 95. Temper tantrums or hot temper	87. <i>rejected</i> : item 98 from the ACA has been included and due to the similarity, both items are not required 103. <i>rejected</i> : item lacks specificity; there could be other reasons for an individual to be unhappy 18. <i>rejected</i> : items 72 and 91 from the ACA have been included therefore CBCL item 18 is not required 86. <i>rejected</i> : lacks specificity; there could be other reasons for an individual to be stubborn, sullen or irritable. 95. <i>accepted</i> : tantrums at this developmental stage suggest potential regulatory difficulties

		<p>71.<i>accepted</i>: item is indicative of dissociation. Original C-PTSD proposal highlights dissociative symptoms are covered under criterion 4</p> <p>74.<i>accepted</i>: item is indicative of dissociation. Original C-PTSD proposal highlights dissociative symptoms are covered under criterion 4</p> <p>78.<i>accepted</i>: item is indicative of dissociation. Original C-PTSD proposal highlights dissociative symptoms are covered under criterion 4</p> <p>82.<i>accepted</i>: item is indicative of dissociation. Original C-PTSD proposal highlights dissociative symptoms are covered under criterion 4</p> <p>94.<i>accepted</i>: item is indicative of dissociation. Original C-PTSD proposal highlights dissociative symptoms are covered under criterion 4</p>		
5) Persistent beliefs about oneself as diminished, defeated or worthless, accompanied by deep and pervasive feelings of shame, guilt or failure related to the traumatic event.	3. Believes he/she is no good at anything 6. Complains of not being likeable 23. Feels ashamed 25. Feels worthless or inferior 49. Says he/she is ‘bad’ or ‘no good’ 56. Thinks other young people are better than him/her	<p>3. <i>rejected</i>: item suggests person has an essentially negative view of ‘self’ rather than ‘abilities’. i.e. they believe they are ‘no good’, not ‘no good at anything’. They see themselves as being essentially bad, worthless, unlovable, etc, not as being bad at schoolwork or bad at sport, etc.</p> <p>6. <i>accepted</i>: item speaks to one’s negative view of self</p> <p>23. <i>accepted</i>: criterion specifically addresses shame, however it is not known what is causing the sense of shame</p> <p>25. <i>accepted</i>: criterion specifically states worthless as does the item</p> <p>49.<i>accepted</i>: item speaks to one’s intrinsic view of self around their essence of self being ‘bad’</p> <p>56. <i>accepted</i>: item speaks to a diminished view of oneself</p>	35. Feels worthless or inferior 52. Feels too guilty	<p>35. <i>rejected</i>: same as item 25 in the ACA, both are not required</p> <p>52. <i>accepted</i>: criterion specifically addresses guilty, however there is a lack of specificity in the item to know the cause of the guilt</p>
6) Persistent difficulties in sustaining relationships and in feeling close to others.	4. Changes friends quickly 12. Distrusts friends 15. Does not show affection 22. Fears you (or other adults) will reject him/her 40. Possessive, can't share friends 50. Seems alone in the world (not connected to people or places) 57. Threatens to withdraw love (e.g. “I won't love you anymore unless ...”) DCI 29: Won’t communicate with other young people	<p>4. <i>accepted</i>: changes friends quickly suggests they are not sustaining relationships</p> <p>12. <i>accepted</i>: distrust can create difficulty in relationships</p> <p>15. <i>accepted</i>: original C-PTSD proposal highlights people may avoid showing interest in relationships, this item speaks to that.</p> <p>22. <i>rejected</i>: Criterion refers to people who don’t feel close to other people, the fear of rejection is not specifically mentioned in the criterion.</p> <p>40. <i>rejected</i>: item lacks specificity; can’t share friends does not necessarily equate to difficulty in sustaining relationships</p> <p>50. <i>accepted</i>: the disconnect in the item speaks to the difficulty in feeling close in the criterion</p>	25. Doesn’t get along with other kids	<p>25. <i>rejected</i>: item does not adequately capture the criterion</p>

		DCI 29. <i>accepted</i> : item speaks to difficulties in sustaining relationships. In addition, lack of communication can lead to lack of feeling closeness 57. <i>rejected</i> : item does not adequately capture the criterion		
A. Exposure * Multiple or chronic exposure to one or more forms of developmentally adverse interpersonal trauma (e.g., abandonment, betrayal, physical assaults, sexual assaults, threats to bodily integrity, coercive practices, emotional abuse, witnessing violence and death). * Subjective experience (e.g., rage, betrayal, fear, resignation, defeat, shame).	We can assume that every participant in this sample has experienced maltreatment to a level of harm that required them to be removed from their home.			
B. Triggered pattern of repeated dysregulation in response to trauma cues Dysregulation (high or low) in presence of cues. Changes persist and do not return to baseline; not reduced in intensity by conscious awareness. * Affective. * Somatic (e.g., physiological, motoric, medical). * Behavioural (e.g., re-enactment, cutting). * Cognitive (e.g., thinking that it is happening again, confusion, dissociation, depersonalization). * Relational (e.g., clinging, oppositional, distrustful, compliant). * Self-attribution (e.g., self-hate, blame).	<i>Affective</i> 59. Too dramatic (false emotions) 52. Shows intense and inappropriate anger 80. Extreme reaction to minor event (or for no obvious reason) 98. Sudden or extreme mood changes <i>Somatic</i> <i>Behavioural</i> 104. Tries to involve others in sexual behaviour 91. Intentionally harms him/herself with knife/implement DCI 20. Play includes violent and frightening themes <i>Cognitive</i> 71. Appears dazed, ‘spaced out’ (like in a trance) 74. Can't tell if an experience is real or a dream 86. Has periods of amnesia (e.g. has no memory of what has happened in the last hour) <i>Relational</i> 11. Distrusts adults 12. Distrusts friends 5. Clingy 58. Too compliant (over-conforms) <i>Self-Attribution</i> 24. Feels victimised or misunderstood 29. Has a low opinion of him/herself	59. <i>rejected</i> : item does not also suggest a difficulty with affect regulation 52. <i>accepted</i> : intense anger can be a sign of decreased regulatory capacity 80. <i>accepted</i> : extreme reactions can be consistent with dysregulation 98. <i>accepted</i> : mood changes can also reflect affect dysregulation 104. <i>rejected</i> : while ‘re-enactment’ is listed specifically in the criterion, this item is not necessarily specific to a behavioural response to trauma cues, there are other reasons this behaviour may occur. 91. <i>accepted</i> : item is specifically mentioned in the criterion and is suggested to be a result of severe dysregulation DCI 20. <i>accepted</i> : these themes may be re-enacted 71. <i>accepted</i> : item relates strongly to dissociation as listed in the criterion 74. <i>accepted</i> : item relates strongly to dissociation as listed in the criterion 86. <i>accepted</i> : amnesia can be associated with dissociation which is listed in the criterion 11. <i>accepted</i> : distrusting is mentioned in both criterion and item 12. <i>accepted</i> : distrusting is mentioned in both criterion and item 5. <i>accepted</i> : clingy is mentioned in both criterion and item 58. <i>accepted</i> : compliant is mentioned in both criterion and item	<i>Affective</i> 87. Sudden changes in mood or feelings 103. Unhappy, sad or depressed <i>Somatic</i> 24. Doesn’t eat well 44. Bites fingernails 46. Nervous movements or twitching 76. Sleeps less than most kids <i>Behavioural</i> 18. Deliberately harms self or attempts suicide <i>Cognitive</i> 13. Confused or seems to be in a fog 17. Day dreams or gets lost in thoughts 40. Hears sounds or voices that aren’t there 47. Nightmares 70. Sees things that aren't there 80. Stares blankly <i>Relational</i> 11. Clings to adults or too dependent 37. Gets in many fights 57. Physically attacks people 97. Threatens people <i>Self-Attribution</i>	87. <i>rejected</i> : item 98 in ACA has been accepted, both are not required 103. <i>rejected</i> : item lacks specificity; there could be other reasons for an individual to be unhappy 24. <i>rejected</i> : lacks specificity; there could be other reasons the person doesn’t eat well (e.g. poverty, poor diet choices, AVIDS, etc) 44. <i>rejected</i> : lacks specificity; there could be other reasons the person bites their nails (e.g. habits, anxiety related to school/social/etc). 46. <i>accepted</i> : criterion highlights motoric dysregulation and this could be considered under that umbrella 76. <i>rejected</i> : lacks specificity; there could be other reasons the person doesn’t sleep well 18. <i>rejected</i> : item 91 from the ACA has been accepted, both are not required. 13. <i>accepted</i> : item and criterion both highlight confusion 17. <i>rejected</i> : lacks specificity, there are other items selected from the ACA that better describe this symptoms in line with the criterion. 40. <i>rejected</i> : while psychotic symptoms can be part of an individual’s symptom makeup following trauma, the criterion does not specifically state psychotic features 47. <i>rejected</i> : item lacks specificity, there are other reasons an individual may have nightmares 70. <i>rejected</i> : same as psychotic explanation above in item 47 80. <i>rejected</i> : item lacks specificity, there a numerous reasons a person could stare blankly (e.g. confused, tired). This item would be considered under the

				dissociative symptom umbrella however other items have been selected that fit the criterion more precisely. 11. <i>rejected</i> : item 5 from ACA has been accepted, both are not required 37. <i>rejected</i> : lacks specificity, there may be other reasons a person gets into fights 57. <i>rejected</i> : lacks specificity, there may be other reasons a person attacks others 97. <i>rejected</i> : does not speak to the oppositional nature of the criterion adequately.
C. Persistently Altered Attributions and Expectancies * Negative self-attribution. * Distrust of protective caretaker. * Loss of expectancy of protection by others. * Loss of trust in social agencies to protect. * Lack of recourse to social justice/retribution. * Inevitability of future victimization.	<u>Negative self-attribution</u> 3. Believes he/she is no good at anything 6. Complains of not being likeable 10. Dislikes him/herself 25. Feels worthless or inferior <u>Distrust of protective caretaker</u> 22. Fears you (or other adults) will reject him/her <u>Loss of expectancy of protection by others</u> <u>Loss of trust in social agencies to protect</u> <u>Lack of recourse to social justice/retribution</u> <u>Inevitability of future victimization</u> 55. Suspicious DCI 31. Worries that something bad will happen to you DCI 14. Fears he/she might be molested	3. <i>rejected</i> : lacks specificity; item does not suggest attribution as much as low self-esteem 6. <i>rejected</i> : lacks specificity; item does not suggest attribution as much as low self-esteem 10. <i>rejected</i> : lacks specificity; item does not suggest attribution as much as low self-esteem 25. <i>rejected</i> : lacks specificity; item does not suggest attribution as much as low self-esteem 22. <i>accepted</i> : fear of rejection can be part of the distrust 55. <i>rejected</i> : lacks specificity; item does not necessarily equate to the nature of the criterion DCI 31. <i>rejected</i> : lacks specificity in regards to ‘something bad’, additionally does not speak to the ‘inevitability’ of the criterion. DCI 14. <i>accepted</i> : does not speak to the ‘inevitability; however does speak to specific victimization	<u>Negative self-attribution</u> 35. Feels worthless or inferior 52. Feels too guilty <u>Distrust of protective caretaker</u> <u>Loss of expectancy of protection by others</u> <u>Loss of trust in social agencies to protect</u> <u>Lack of recourse to social justice/retribution</u> <u>Inevitability of future victimization</u> 89. Suspicious	35. <i>rejected</i> : lacks specificity; item does not suggest attribution as much as low self-esteem 52. <i>accepted</i> : speaks to the responsibility felt by victim 89. <i>rejected</i> : lacks specificity; item does not necessarily equate to the nature of the criterion
D. Functional Impairment * Educational. * Familial. * Peer. * Legal. * Vocational.			61. Poor school work	61. <i>rejected</i> : lacks specificity, there are other reasons a young person might display poor school work (e.g. learning difficulties)